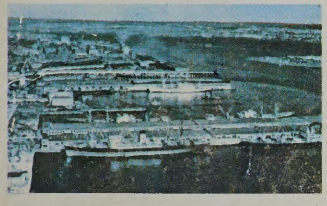

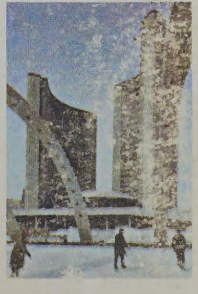

SOUTHERN ONTARIO

Workshop of the Nation

REGIONAL STUDIES OF CANADA

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Quebec—French-Canadian Homeland

The Atlantic Provinces—Tidewater Lands

Manitoba—Where East Meets West

Saskatchewan—Land of Far Horizons

Alberta—Where the Mountains Meet the Plains

British Columbia—Mountain Wonderland

North of Sixty—Canada's Advancing Frontier

REGIONAL STUDIES OF CANADA

SOUTHERN ONTARIO *Workshop of the Nation*

Doreen Margaret Tomkins

with George S. Tomkins

and Neville V. Scarfe

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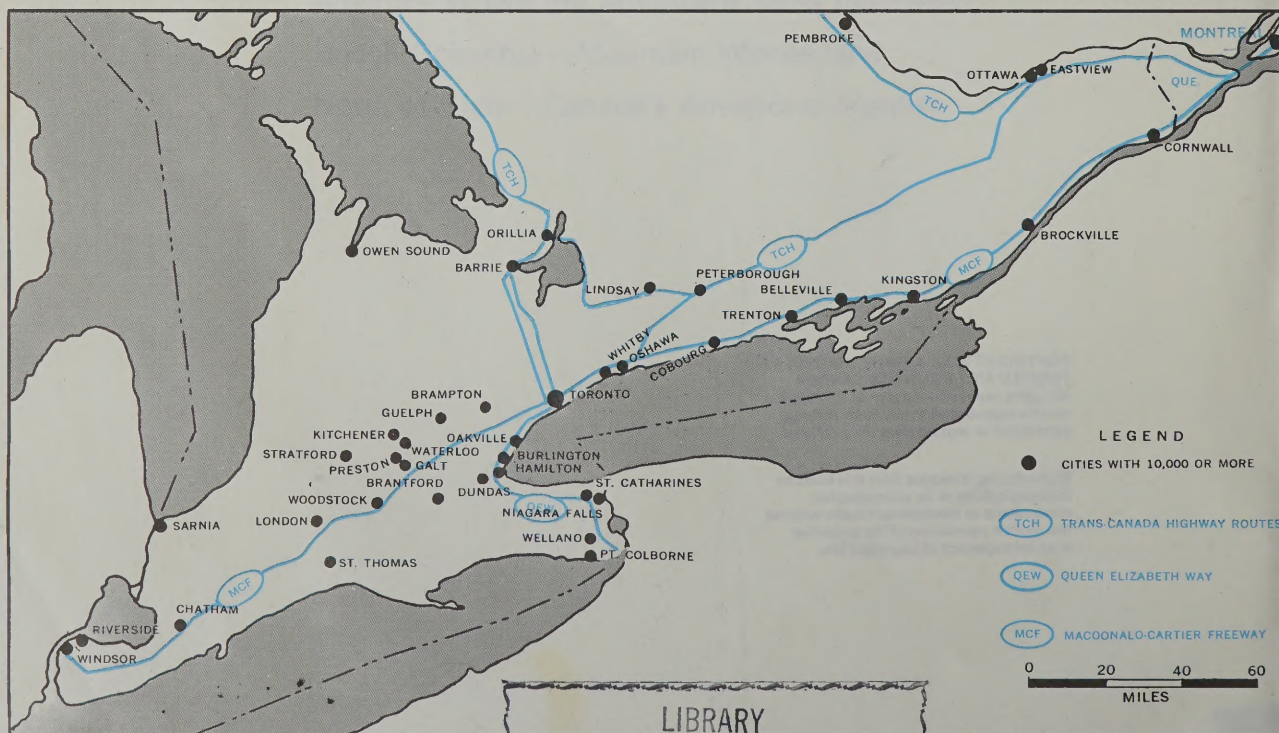
SOUTHERN ONTARIO

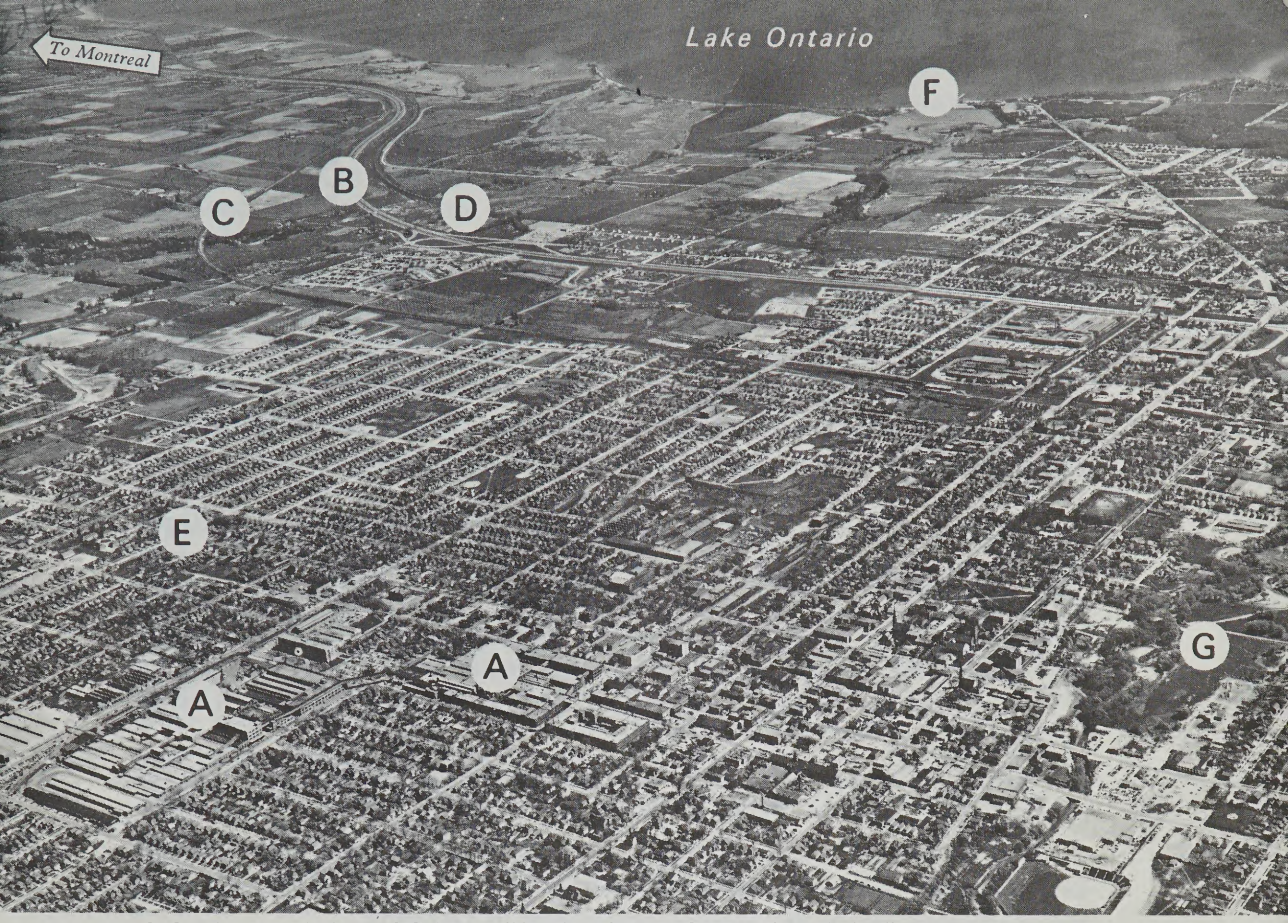
Workshop of the Nation

Nearly all cars made in Canada come from one of these towns — Windsor, Hamilton, Oakville, or Oshawa. Refer to Figure 2-1. What do the locations of all these towns have in common? Cars are but one of the many things made in Southern Ontario. Look around your home. How many items of food in your mother's kitchen were produced or packaged in this area? How many of your school books were printed and published in the Toronto district? How many of your electrical appliances were made in Southern Ontario?

Figure 2-3 shows how important Ontario is in our national production. In addition, nearly one third of all Canadians live in this province, most of them in the southern part. In this chapter we shall try to find out why Southern Ontario has so many people, and why it makes nearly half of Canada's manufactured goods.

2–1. More than 10,000 people live in each one of these cities of Southern Ontario.





2–2. A general view of Oshawa (Hunting Survey Corporation Limited). A—Large factories making automobiles or parts of automobiles; B—Macdonald-Cartier Freeway, Windsor to Eastern Ontario's border; C—Canadian Pacific Railway, Toronto-Montreal line; D—Canadian National Railway, Toronto-Montreal line; E—Highway route 2, Toronto to Montreal; F—Oshawa harbor; G—Oshawa creek.

Oshawa — where automobiles are born

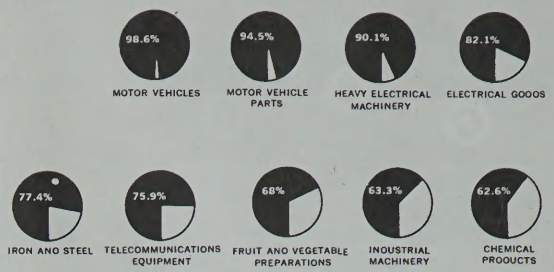
Figure 2-2 is a view of Oshawa. In which direction are we looking? Over half the workers in this city are employed in automobile and truck manufacturing.

1. Locate the factories where people work to produce automobiles. Some make the actual cars, but many others produce safety glass, auto springs, car handles, and other items used in making automobiles. Not all the plants are shown in this picture.

2. What means of transportation are available to bring in materials and to export finished products? Oshawa harbor can accommodate any lake carrier. Coal and oil for local use are brought in this way. Since boats are not suitably designed for carrying automobiles, exports by water are nil.

3. Refer again to Figure 2-1. Why is Oshawa in a good location for marketing cars? There is a large market in Southern Ontario and Quebec. Oshawa is very close to the centre of this market. Toronto, Ottawa, and Montreal are within overnight travelling distance of Oshawa.

2–3. Ontario's production of certain articles as percentages of Canada's output.



4. Describe the relief of the land at Oshawa. How does this assist in building large factories? Suggest why a large, single-floor uninterrupted organization is an efficient way to manufacture automobiles.

Many centres in Southern Ontario and Quebec have similar advantages to Oshawa for making cars. The fact that Robert McLaughlin, a carriage maker by trade, settled in Oshawa in 1876 and became one of the earliest producers of the "horseless carriage," is undoubtedly an important reason why Oshawa has become a major automobile manufacturing city today. This is a good example of how personal choices can influence the growth of an industry.

Oshawa is one of many important industrial cities on the Ontario shores of the Great Lakes-St. Lawrence Waterway. Look at Figure 2-1 and make a list of such cities. Most of these towns are more than one hundred and fifty years old, and so are among the oldest cities in Canada. Why were these waterside sites among the earliest settlements in Ontario?

The waterways are no longer the chief means of travel, but they are still the cheapest means of moving heavy bulk goods such as oil and grain. In addition, valley routes are often followed by modern rail and highway routes.

The St. Lawrence Seaway — a dream come true

In June, 1959, rockets crackled and colored streamers and balloons flew high into the air as the royal yacht *Britannia* with Queen Elizabeth and

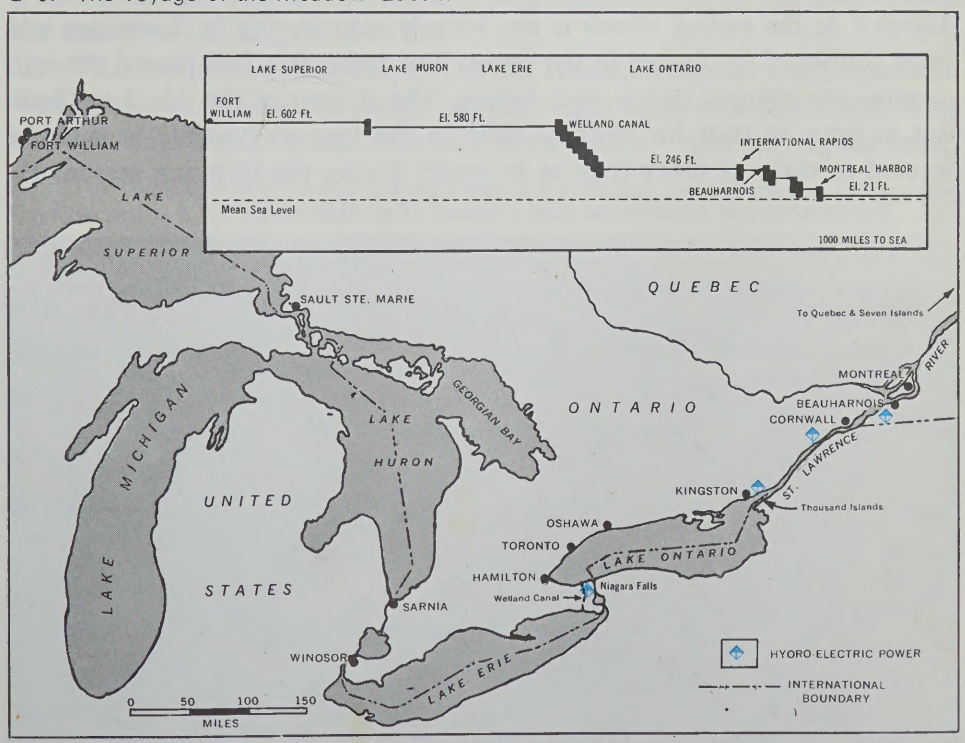
2–4. A lake freighter carrying grain through the Great Lakes (Canada Steamship Lines).

President Eisenhower aboard nosed its way into the St. Lambert lock at Montreal. This was an occasion for great rejoicing, for it had long been a dream that large vessels should be able to make an uninterrupted voyage between the Great Lakes and the Atlantic Ocean. For centuries this had been the main route to the heart of the continent, but always travellers were delayed by the numerous falls and rapids along the way. Early explorers shouldered their canoes and portaged around the obstacles. Later on a series of canals was built, but these were only fourteen feet deep and could accommodate only small boats. Passing through the numerous canals and locks slowed down the vessels. Transferring goods from large ocean boats to smaller canal boats at Montreal wasted time and labor.

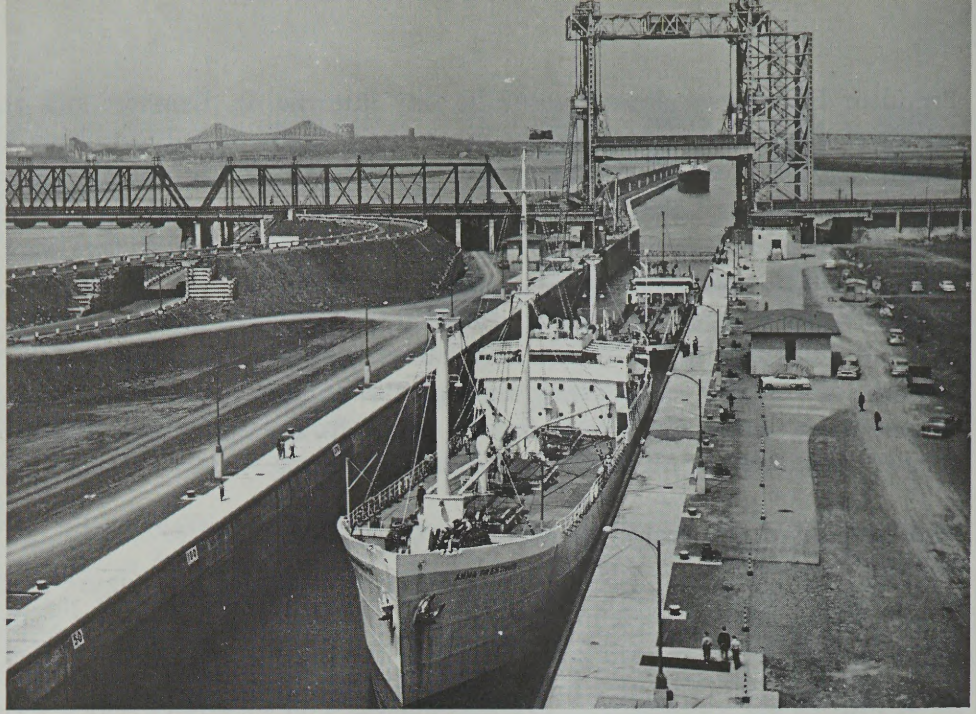
The voyage of the freighter *Meadow Queen**

The *Meadow Queen* is a large freighter similar to that shown in Figure 2-4. She was built at Port Arthur, Ontario, and is 730 feet long — more than twice the length of a football field. The holds are box-like with smooth sides so that no particles of cargo will collect there. She travels regularly between Fort William and Seven Islands and carries cargoes of grain and iron ore. She makes round trip voyages of four thousand miles and is seldom out of sight of land. Figure 2-5 is a map of a voyage made by the *Meadow Queen.*

2–5. The voyage of the *Meadow Queen.*



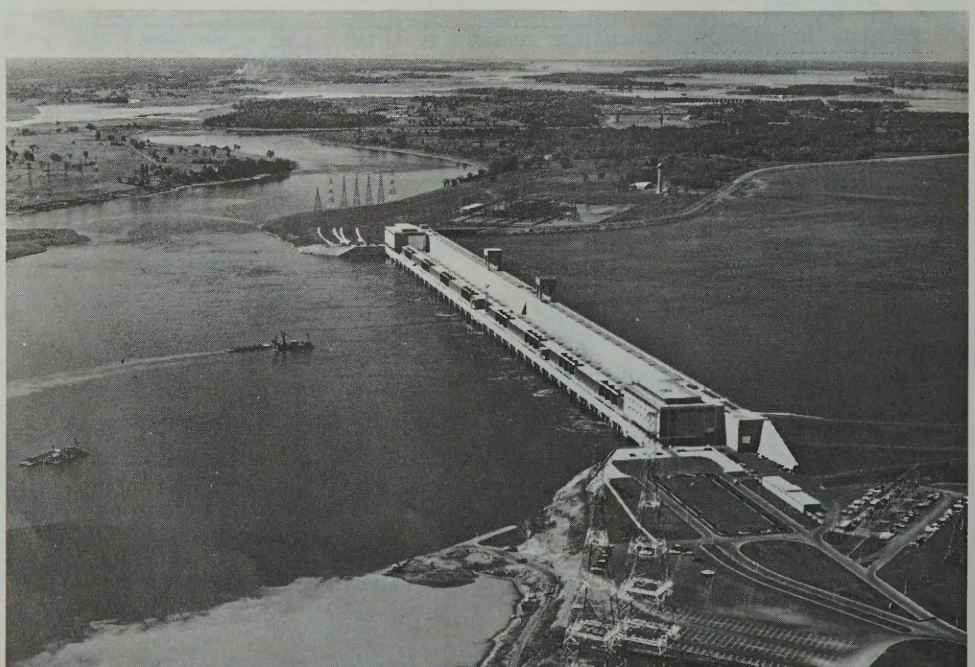
*For the background material used in this section, the authors are indebted to Canada Steamship Lines Ltd.



2–6. Freighters in the first lock of the St. Lawrence Seaway at Montreal (National Film Board).

In March, she pulled away from the dock at Seven Islands. She was loaded with iron ore, and was in fine condition after her clean-up and overhaul during the winter months. Why could she not work from December to March? At the end of March it was bitterly cold on the St. Lawrence and large chunks of ice floated in the water. The icebreaker had passed through opening the channel only a week before. The skipper of the *Meadow Queen* was anxious to start his work as early in the year as possible because he wanted to make as many trips as he could during the shipping season. He

2–7. The international powerhouse near Cornwall (Carl Malcolm).



travelled as far as Montreal without meeting any obstacles. How many miles had he already travelled? Here he found he had to wait in line because many other boats wanted to get an early start too, and they had to wait their turn to enter the first lock of the Seaway. Figure 2-6 shows two boats in the lock at Montreal. At what elevation was the *Meadow Queen* in Montreal Harbor? How many feet did she climb before she reached the end of her voyage in Fort William? Boats climb by a series of locks which form a gigantic staircase. How many locks did the *Meadow Queen* pass through in the whole voyage?

As boats travel upstream, the river becomes narrower and it is possible to see buildings and farms on the land on either side. According to Figure 2-7 what does the land look like? The land on one side is part of Canada and on the other side lies the United States. Why were the heads of state of both Canada and the United States on board the *Britannia* when the Seaway was opened? The international boundary passes right through the great power-house in Figure 2-7. The output of power is shared equally. In the distance is the navigation canal through which the *Meadow Queen* passed. When the dam and powerhouses were built in this section, it was necessary to flood parts of the valley. The towns of Iroquois and Morrisburg were moved, and rail and road routes were rebuilt on higher ground.

One of the loveliest parts of the voyage is through the Thousand Islands shown in Figure 2-8. Why is this area an asset to Ontario? The *Meadow Queen* could not linger, however, and proceeded directly to Hamilton where she unloaded her cargo of iron ore.

With her holds almost empty, she left Hamilton Harbor and entered the Welland Canal. There she passed through eight locks in a single day. Why was this canal with so many locks built at this point? After leaving the canal,

2–8 The Thousand Island bridge looking towards the Ontario shore (Canadian Government Travel Bureau).

vessels can proceed without interruption for several days. But crews must be alert, for there are crowded and difficult stretches. At Windsor they must pass under the International Bridge. Here the Detroit River is one of the busiest and most crowded waterways in the world, and dredgers are always at work to keep the channel open. The river at Sarnia is narrow, too, and the skipper must be careful to avoid collision with one of the many oil tankers that are always moving in and out of this port.

Once out of Sarnia, the *Meadow Queen* left behind the many busy ports of Southern Ontario. She headed out across Lake Huron. Looking out over this endless expanse of water, it is hard to believe that one is near the centre of the continent. After passing through the locks to overcome the rapids at Sault Ste. Marie, the *Meadow Queen* was on the final lap of the voyage. When the grain elevators at Fort William came into view, the skipper prepared his ship for loading with wheat which was poured into the hold through long chutes from the elevators. Soon he turned the vessel around and retraced his journey to Seven Islands. There he transferred his grain to elevators to await shipment overseas and took on his second cargo of iron ore. He had been away for nineteen days and had completed the first of twelve round trips for the season.

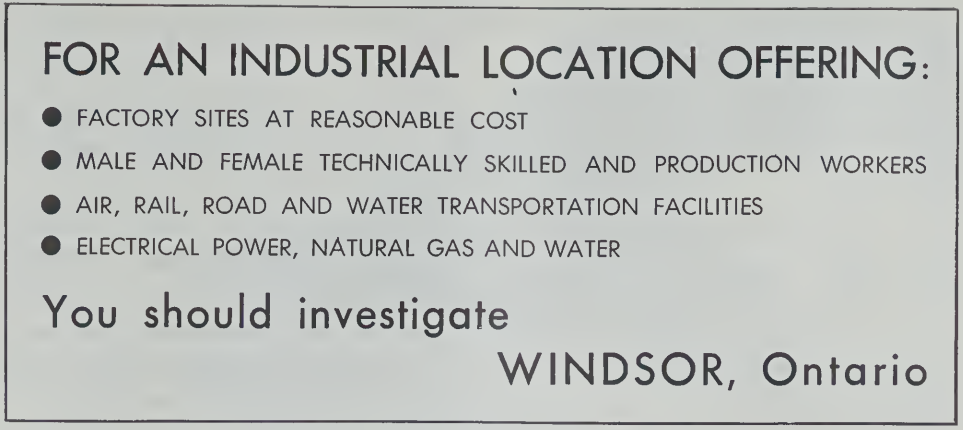
The *Meadow Queen* is one of many vessels travelling on the Great Lakes - St. Lawrence Waterway. Coal, ore, grain, oil, scrap, and other bulky cargoes are most cheaply and easily moved by water. In a single load, a large lake freighter can carry as much grain as four miles of freight cars. Cheap transportation encouraged men to build factories in towns such as Oshawa on the water route. Name some other advantages of locating industries in these towns.

The industries of Southern Ontario grew rapidly, and there was a great demand for power. The small boats moving slowly through many locks and canals were not adequate to carry the cargoes. The bottlenecks in the waterway and the shortage of power led to the building of the St. Lawrence Seaway in the 1950's.

The work of the St. Lawrence Seaway and Power Authority

1. From Figure 2-5 find out where the hydro-electric power developments are located. Power from the International Rapids and Niagara is very important to the industries of Southern Ontario. From what you have already discovered about the land of Southern Ontario, suggest why there is a shortage of hydro-electric power sites.

2. How do vessels such as the *Meadow Queen* by-pass the falls and powerhouses? The new canals provide a channel 27 feet deep between



2–9. An advertisement from the City of Windsor Industrial Commission.

Montreal and Lake Erie. This enables the large lakers to travel the entire length of the inland waterway instead of being confined to the Great Lakes. Most ocean freighters can travel to the ports on the Great Lakes.

3. Why does the port of Montreal close for a few days each winter? During the shipping season, this port handles more cargo than either Vancouver or Halifax, which are open all year. How do engineers try to keep the channel open for as many days as possible?

4. Which parts of the Great Lakes - St. Lawrence Waterway attract many tourists?

The Great Lakes - St. Lawrence Waterway is of vital importance to Southern Ontario. Historic settlements, tourist resorts, recreation areas, and rich farmlands line its shores. Piers, wharves, docks, factories, and warehouses crowd around its harbors. Heavy water traffic carries vast quantities of goods in and out of Canadian ports. Thousands of people and tons of goods travel on the roads and railways which parallel the water route. The waters have been harnessed to provide power for the factories. Many of Canada's great industrial cities are located in favored positions on this historic route.

Why is Windsor a great industrial city?

Figure 2-9 is an advertisement for the city of Windsor. How does the map in Figure 2-10 explain why Windsor can offer these advantages?

1. Estimate the length of shoreline in the Windsor area. All these sites can be serviced by water. There is plenty of flat land available for large one-storey factories.

2. Count the number of major roads and railways into Windsor. How can you tell that this is an important border crossing point?

3. Find the generating station which provides the electrical power mentioned. Coal is used in this plant. Why was it built close to the water? Natural gas reaches Windsor by pipeline from Alberta. Oil and coal are not mentioned, but they are easily brought in by boat.

4. Large quantities of water are required by many industries, such as iron and steel, or chemical industries. Why is Windsor well supplied with this commodity?

5. Windsor's greatest asset is its large reserve of skilled workers. Manufacturing has been important in Windsor for nearly a hundred years, and few cities can offer such a large experienced skilled labor force.

6. Altogether, Windsor lists over four hundred industries. The huge automobile factories employ the most workers. Which type of industry has the most establishments? What non-metallurgical industries are important?

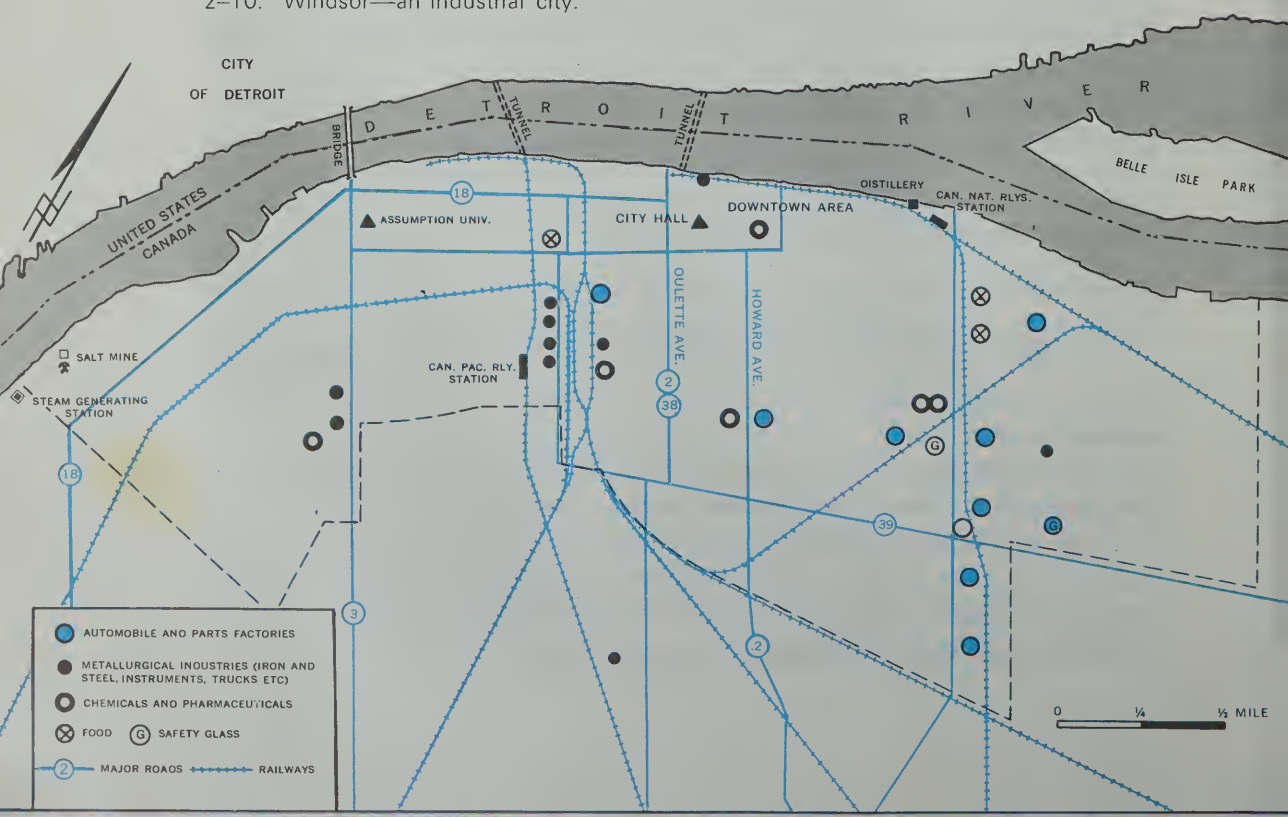
Hamilton — a primary iron and steel centre

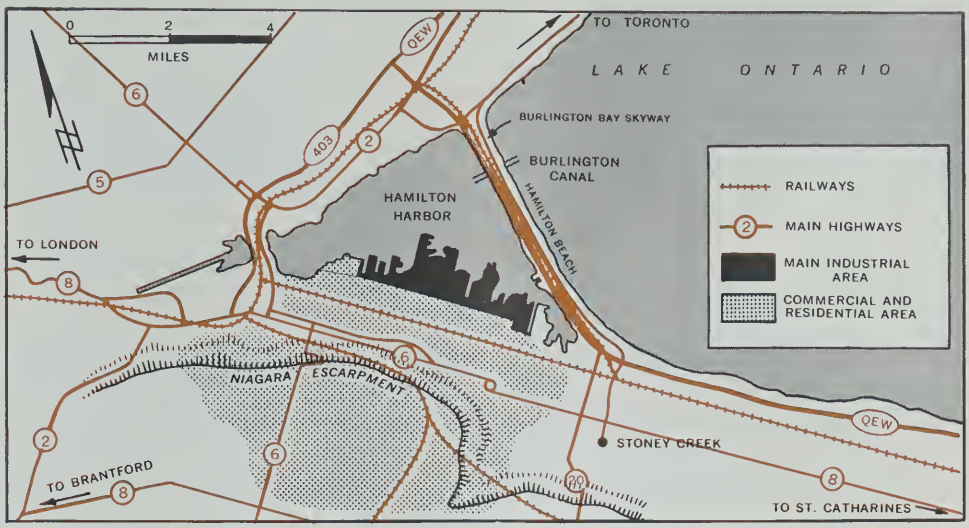
Like all the ports in Southern Ontario, Hamilton has a great variety of industries. But here they are overshadowed by the huge furnaces and smoking chimneys of the iron and steel works that line the south shore of the harbor. Hamilton is the greatest producer of *primary iron and steel* in Canada. "Primary" means "first", and refers here to the making of steel bars, plates, and blocks from iron ore. From primary iron and steel, other factories can make automobiles, machinery, kitchenware, and many other steel products.

Summer holidays in Hamilton

In August, John Albion came from England to visit his elder brother in Hamilton. This is part of the letter John wrote to his teacher in England.

2–10. Windsor—an industrial city.



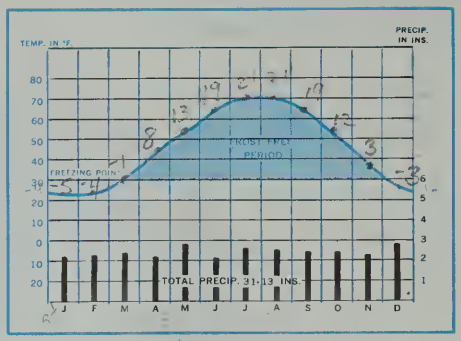


2–11. A map of the area where John spent his holidays.

I had a fine trip. The freighter I boarded in London brought me right into Hamilton harbor. It is an enormous harbor, completely landlocked. We entered by a canal through a sand bar. It seemed very busy. There are huge iron and steel works all along the harbor front. I saw tramp steamers unloading iron ore and coal.

However we were soon away from the noise and smoke. My brother lives on high ground overlooking the city. The ridge has some fine parks along it. They also quarry limestone there for use in the steel plant.

2–12. Hamilton Beach where John cooled off from the summer heat (Ontario Department of Highways).



2–13. Climatic graph of Hamilton.

There are sandy beaches close to the city. I am glad, as it gets very hot sometimes. Yesterday the high temperature was 97° F. They have promised to take me to Niagara Falls while I am here. It is only forty-eight miles away and there is a four lane road all the way. I want to see one of these big highways. They don't pass through Hamilton, which has fewer traffic problems than some other large cities.

What had John discovered about Hamilton during his holiday?

1. John had learned at school that iron ore, coal, limestone, and water are all necessary to produce iron and steel. How does Hamilton get these raw materials?

2. Large quantities of electric power are also needed. Where does Hamilton get hydro-electricity? A thermal plant* is also being built at Hamilton.

3. Refer to Figure 2-11, and find the beach John was referring to. Figure 2-12 is a picture of this beach. How many lines of communication use this bar to cross Lake Ontario and by-pass Hamilton? How much mileage is saved by not following the shore of the lake? What letters label Hamilton Harbor, the steel plant, Niagara Escarpment, Burlington Canal?

4. What was the ridge of high ground John referred to? Name two ways in which the Niagara Escarpment is an asset to Hamilton.

5. What did John say about the summer weather? Figure 2-13 is a climatic graph for Hamilton.

6. Why do the main roads by-pass Hamilton? Why is this a disadvantage? How does it benefit the city?

7. Why is Hamilton in a good position to market its produce?

Sarnia — the town that oil built

Do you use oil to heat your home? You certainly use gasoline and oil in the family car, maybe in your boat or lawnmower too. You probably have plastic toys, detergents, foam rubber cushions, insulation, or latex paint in your home. It is almost certain that you have something which was made in Sarnia, for this city supplies all Canada's synthetic rubber and large quanti-

ties of petrochemicals.

*A thermal plant produces electricity from turbines driven by steam. The steam is produced by burning coal, oil, or natural gas.

Near Sarnia is a roadside sign which reads as follows:

> 1858
> SITE OF THE FIRST COMMERCIAL OIL WELL
> IN NORTH AMERICA

Close by, a fine modern building houses the Oil Museum of Canada. If you think of how much we all depend on oil you will understand why its discovery in this country was very important.

Until 1858, Sarnia was one of the many small lumber and shipbuilding towns on the Great Lakes. From the time oil was discovered in the area, it has grown steadily and today has 50,000 people. A little oil is still produced in the district, but most of the oil now refined at Sarnia is brought in by pipeline from Western Canada.

A large-scale map of Sarnia, Figure 2-14

1. One inch on this map is equal to about ¾ mile on the ground. How far must a man living in Lucasville travel to the Post Office in the centre of Sarnia?

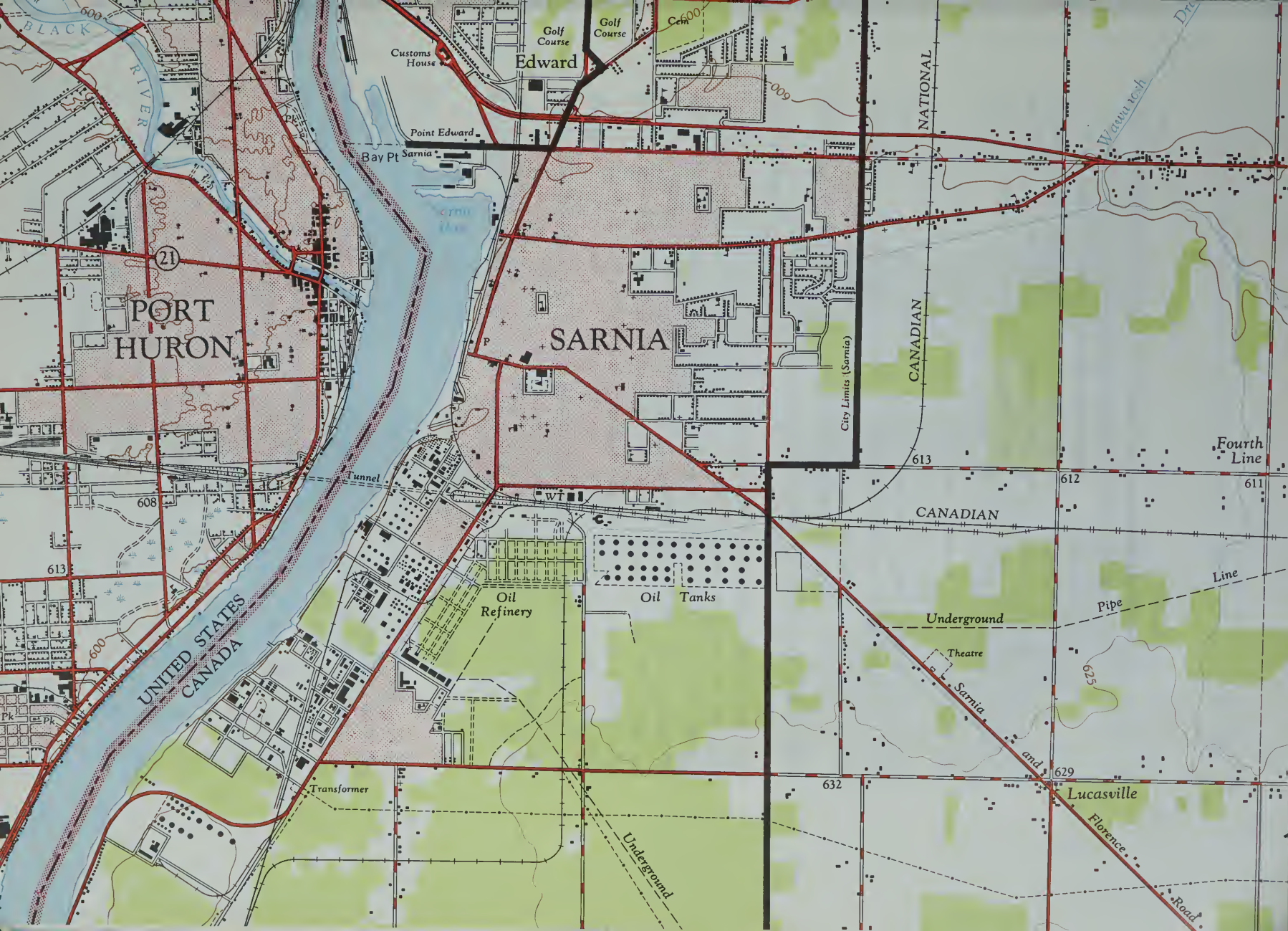
2. What evidence of the oil refining industry can you find on the map? Name four means of transportation used for the movement of oil and oil products. Sarnia has the largest single oil refinery in Canada. Petro-chemicals and synthetic rubber are among the industries related to oil refining. Making synthetic rubber requires large amounts of coal, oil, salt, and fresh water. Why is Sarnia in a good position to assemble these raw materials? How does Sarnia export its products?

3. Find Sarnia Bay. This is the harbor area where the boats dock. The long narrow building shown in black is a grain elevator.

4. What river serves as the International boundary at Sarnia? In which direction is it flowing? How wide is it? What evidence is there that this is an important border crossing point? Which other city of Southern Ontario fulfills this function?

5. Sarnia's "Chemical Valley" has been called a science fiction world. Belching smoke and flickering orange flares, crude oil smells, round silver storage tanks, long chains of tank cars, and weird geometric shapes of refinery equipment seem to belong to a world apart. In a five mile strip is concentrated $300,000,000 of investment. Find "Chemical Valley" in Figure 2-14. On which side of the city does it lie?

6. Sarnians are proud of the beauty of their city. Close by are fine sandy beaches on Lake Huron. What forms of recreation are shown on the map?


PORT HURON
SARNIA
Edward
Point Edward
Bay Pt
Sarnia
Customs House
Golf Course
Golf Course
Cem
BLACK RIVER
21
Tunnel
608
613
600
UNITED STATES
CANADA
Pk
Pk
Oil Refinery
Oil Tanks
Transformer
Underground
City Limits (Sarnia)
NATIONAL
CANADIAN
CANADIAN
Fourth Line
613
612
611
632
629
625
Underground
Pipe
Line
Theatre
Sarnia and
Lucasville
Florence
Road
Wawanosh

2–15. A sketch map of Upper Canada Village.

2–16. The Glengarry School in Upper Canada Village (Ontario-St. Lawrence Development Commission).

Two Cities of Eastern Ontario. Cornwall — the Seaway City

The most spectacular changes made by the St. Lawrence Seaway are near Cornwall. Close by are the dams and powerhouses which transformed this sector of the St. Lawrence Valley. New highways, new railways, and even new towns have sprung up in the area to replace those which now lie beneath the waters of the newly formed lake. Cornwall has always benefitted from its position on the St. Lawrence. Water, road, and railways transport can bring goods to and from the factories which produce textiles, paper products, clothing, and chemicals. Cornwall is the site of a new international bridge to the United States.

Along the Seaway: parks and the past

Fourteen major parks have been developed along the 170 mile strip of the Seaway between the Quebec border and Lake Ontario. Some are mainly beach and picnic areas. Why does this part of Canada need a great many recreational areas? In one section, ten islands rise above the waters of the lake, and these have been joined to form a scenic drive known as the Long Sault Parkway. Since this is one of the longest settled areas of Canada, there are several museums and historic sites. Old buildings from all over Southern Ontario have been moved to one site to create a unique museum of pioneer times. This is called Upper Canada Village. Why is this a good name?

Collecting exhibits for Upper Canada Village

Figure 2-15 is a map showing some of the main buildings of Upper Canada Village. In addition, there are three museums; demonstrations of home crafts,

2–14 (Opposite). A topographic map of Sarnia on the scale of 1:50,000 (Sheet 40J/16 West Half, in the National Topographic Series) (Department of Mines and Technical Surveys, Ottawa).

early farming, and industries can be seen; and all buildings are furnished with nineteenth century equipment. When the Ontario-St. Lawrence Development Commission started this project they tried to include as many typical features of pioneer days as possible.

1. Most settlers were farmers, but as more people arrived they could support professional services, such as doctors and clergymen. How many such people are represented in the village?

2. Ashes, grain, homespun cloth, cheese, lumber, and meat were the chief products of the early farms. These were bartered for sugar, salt, tea, cooking pots, and cotton goods. Where did the settler buy these?

3. Name two industries represented. Why are they located on the creek? Where did the wool and the lumber come from?

4. Figure 2-16 shows an old schoolhouse from Glengarry county. What is it made of? Why do you think many of the old buildings were made from this material?

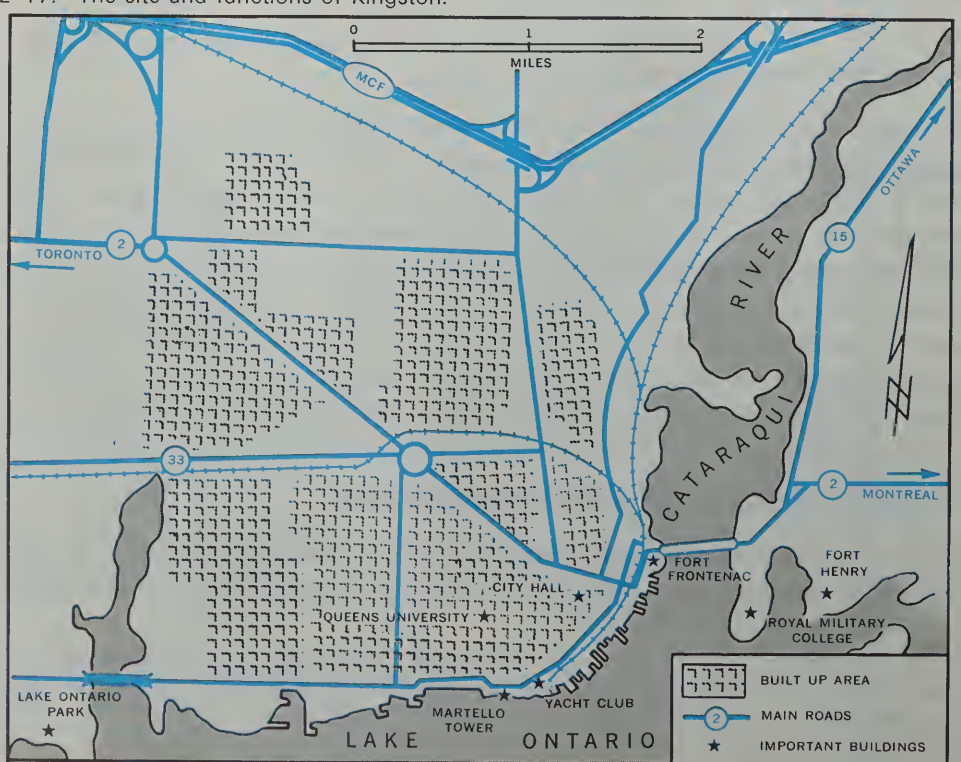
5. What can a visitor to the village learn about pioneer travel and accommodations?

6. Why do you think the planners included a canal and lock in their village?

7. The block house was a lookout against enemy attack. There were many such buildings along the St. Lawrence in the nineteenth century. Who did they fear would attack them?

8. How have the towns of the St. Lawrence Valley changed in the past hundred years?

2–17. The site and functions of Kingston.



Kingston — one of Ontario's most historic cities

For nearly two hundred years Kingston has been an important city. At one time it was the capital of Canada, and it has always been a valuable site. What evidence does Figure 2-17 give that Kingston was heavily defended in the past? What military functions does Kingston perform today? The military institutions employ thousands of soldiers and civilians. Queen's University, five hospitals, and four penitentiaries employ many more. Various government offices are located there, and Kingston supplies all the usual local retail services. None of the jobs mentioned results in the production of goods. Such jobs are called *service functions*. Kingston has a much higher proportion of its people engaged in service functions than most cities.

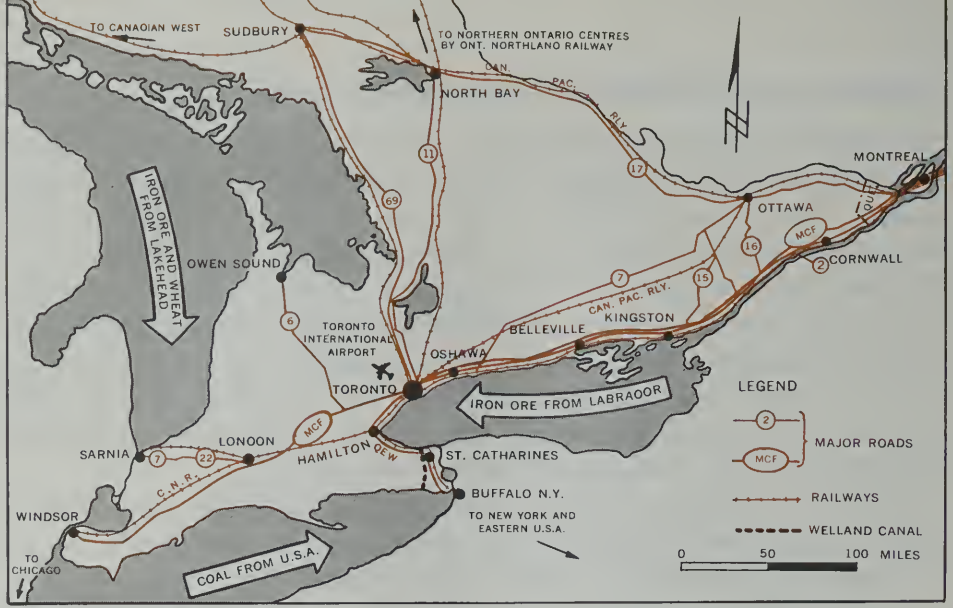
Kingston contains many fine old buildings and plans have been made to preserve them. New housing and shopping districts are to be built according to a plan, so that the best use will be made of the land and buildings in the city. Close at hand are many scenic areas along the shores of Lake Ontario and the St. Lawrence River.

What advantages does Kingston have as an industrial centre? Aluminum, nylon, chemical, and shipbuilding factories are already established in the city.

Toronto — the hub of Southern Ontario

Every day thousands of people pour into Metropolitan Toronto. Many arrive by modern highways such as those shown in Figure 2-18. Others come by train from east, west, or north. Many visitors enter by Toronto International Airport. A few arrive by boat.

2–18. Main traffic arteries on the edge of Toronto (Ontario Department of Highways).



2–19. Toronto as the focus of routes in Southern Ontario.

Many of these people are commuters who live in suburban areas such as that shown in Figure 2-18, but thousands of people come on business or pleasure from all over Canada and from other parts of the world.

Look at the map in Figure 2-19 and count the number of major roads and railways that fan out from Toronto. We have already thought about some reasons why Southern Ontario is the most densely populated part of our country. Now we shall try to discover why Toronto, among the many cities of Ontario, is by far the largest.

A great inland port

1. From your atlas find out how far a ship must travel from Toronto to the open sea beyond Newfoundland. Toronto harbor can accommodate any vessel that can pass through the 27-foot channels of the Seaway canals. Smaller vessels like the *Meadow Queen* are shown in domestic berths in Figure 2-20. Find these berths (at right angles to the main harbor) in the map in Figure 2-21. Suppose the *Meadow Queen* called at Toronto on its way from Montreal to Hamilton. How would she enter the harbor. By what route would she leave?

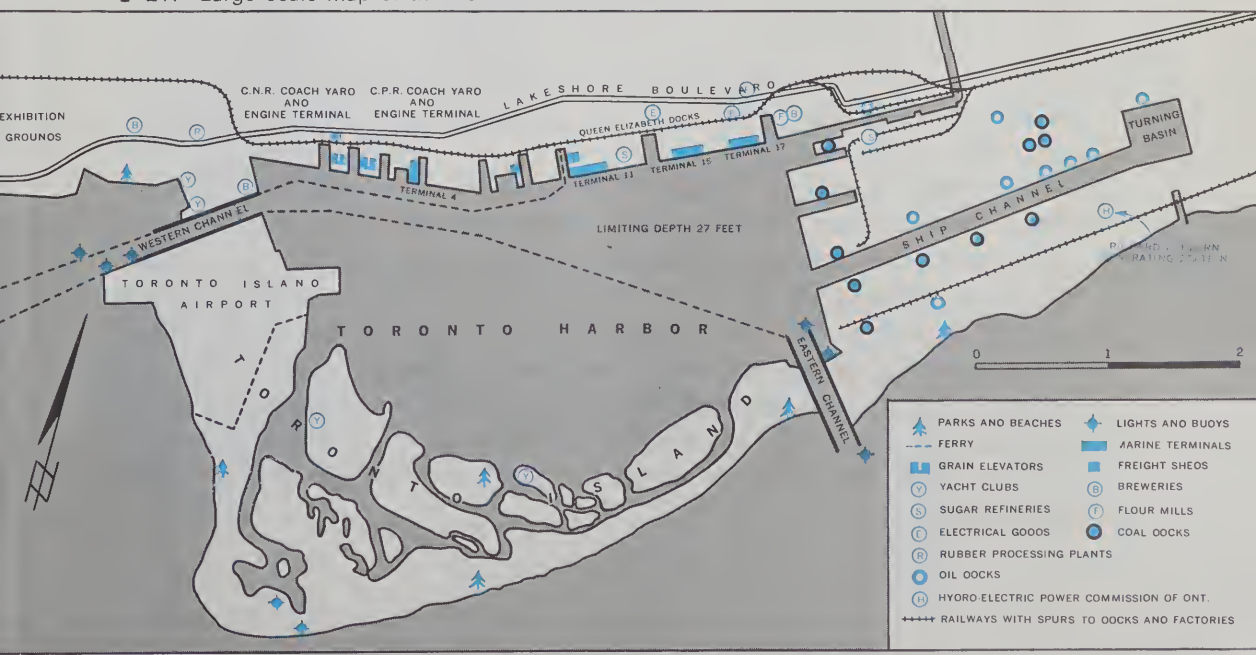
2. How can you tell that the channel has been improved by dredging? What assistance is provided to help the skipper bring the *Meadow Queen* safely into port?

3. In what way does this harbor resemble that at Hamilton? Toronto island is formed of sandbars. How do the people of Toronto make use of it?

Only Chicago, of all the Great Lake ports, handles more overseas cargo. Even so, Toronto has sixty domestic berths compared with eight overseas

2–20. Downtown Toronto and part of the harbor (Toronto Harbor Commission).

2–21. Large-scale map of the Port of Toronto.



2–22. The Richard L. Hearn Generating Station on Toronto Harbor (Ontario Hydro-Electric Power Commission).

berths. Most of Toronto's trade consists of importing raw materials and exporting finished goods to and from other parts of North America. Nine grain elevators, a cold storage plant, and special facilities for handling coal and oil are among Toronto's special equipment.

The biggest industrial city of them all

Toronto has the same advantages as all the other cities on the waterway. From the map in Figure 2-21 make a list of all the industries located close to the harbor. These depend largely on raw materials brought in by water. Sugar refining is increasing, now that raw sugar from the West Indies can be brought in directly by boat instead of being moved from ocean vessels to canal boats at Montreal.

Industry in modern Toronto is not confined to the favored waterfront areas. In downtown Toronto almost every type of factory can be found producing consumer goods, including printing, food processing, clothing, furniture, and machinery. Firms find the central location convenient, especially because of the many excellent transportation facilities nearby. However, many new plants are being established in suburban areas such as that shown in Figure 2-18. Cheaper land for large single-storey plants, in which people and materials can be easily moved, is the most important attraction. In what other cities has this factor helped in the establishment of major industries?

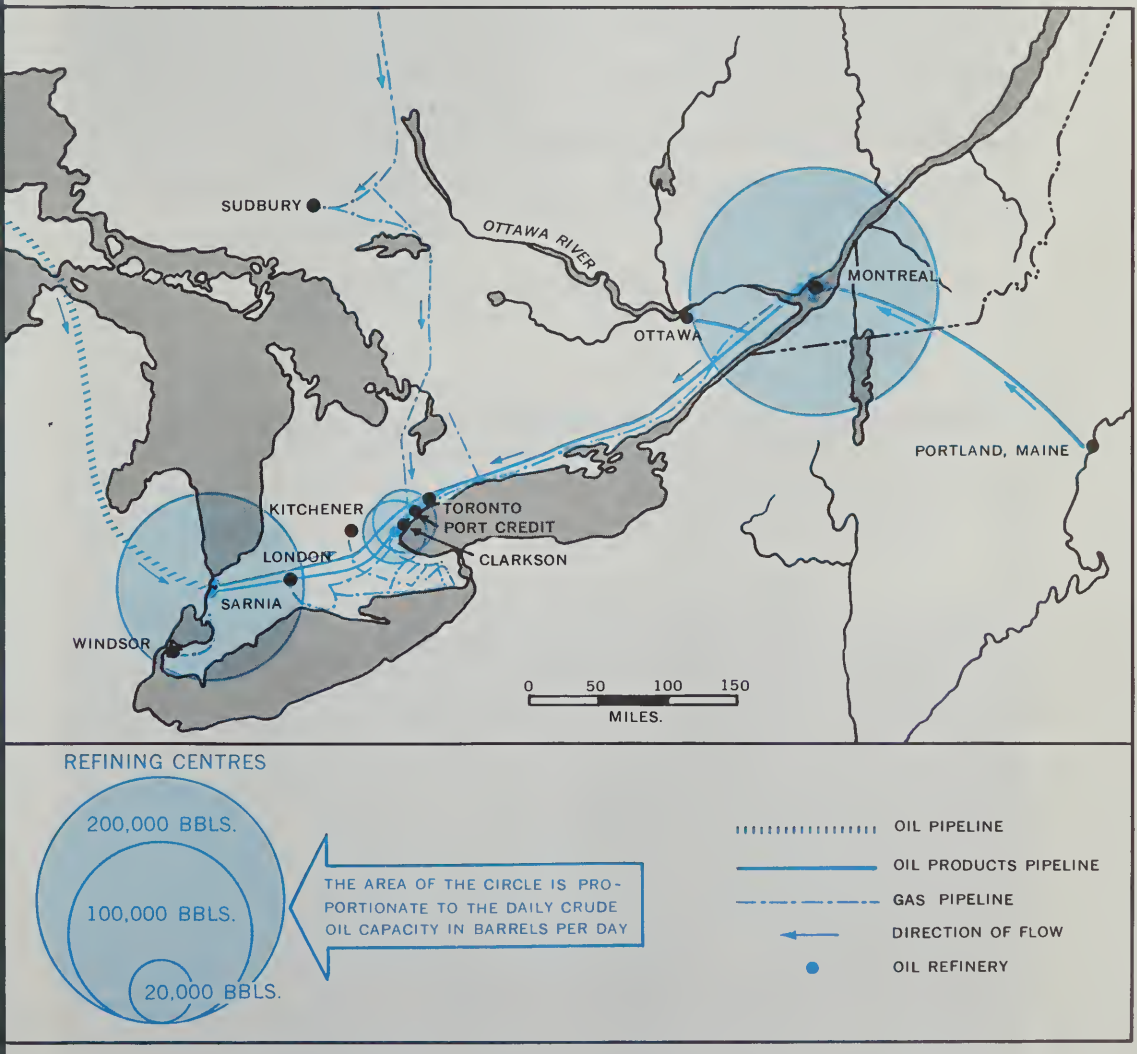
Power to make the factories hum

1. Name two major hydro-electric installations on the Great Lakes-St. Lawrence Waterway which can supply electricity to Toronto.

2. There is not enough hydro-electric power to meet the needs of a huge modern industrial city like Toronto. It has been necessary to build two great *thermal electric power plants* which make electricity from coal. Figure 2-22 is a picture of the Richard L. Hearn Station in Toronto harbor. Locate it in Figure 2-21. How does it obtain its coal?

3. Figure 2-23 shows how easily oil can be obtained in Toronto. Most of it comes from Alberta. What other fuel does Toronto obtain from that region?

2–23. Oil and gas pipelines and oil refineries in Southern Ontario and Quebec.



Service functions for the whole of Ontario

What is a service function? Toronto serves as the capital of Ontario. It has two universities. Most national radio and television programs in English originate in Toronto. This is a service function it performs for the whole of Canada. The Royal Ontario Museum is world-famous among scholars, while art galleries, music conservatories, and theatres make Toronto a leading cultural centre of North America. All these features bring people to Toronto.

"First in Canada"

Toronto was the first city in Canada to open a subway. Originally only 4½ miles were opened, but these quickly proved their value in solving traffic problems and other sections are gradually being completed.

In 1956, Toronto became the first city to adopt full metropolitan government. Thirteen separate municipalities expanded and grew together until they formed a single urban area. This area was divided into six boroughs in 1967, each electing its own mayor and supervising its local affairs. Metro looks after such things as water supply, sewage disposal, and highways. In what ways is this a more efficient method of government? What answers has this study provided to the major question on page 18?

Reviewing the industrial cities of Southern Ontario

Complete the following table.

Factors which have helped the growth of industrial cities on the Great Lakes - St. Lawrence Waterway

	Local raw materials	Getting raw materials from elsewhere	Power available	Industrial sites	Marketing products	Other factors
Windsor	Water	Water routes on Gt. Lakes-St. L. Seaway. Road and rail routes to Ontario, Quebec, and U.S.A.	Natural gas by pipeline. Oil and coal by water.	Flat land; many water-side locations.	Water, road, and rail transport. Large markets of Eastern Canada close by.	Many skilled workers.
Sarnia						
Hamilton						
Oshawa						
Cornwall						
Kingston						
Toronto						

(a) Are local supplies of raw materials an important factor in the growth of these cities?

(b) Why is land and water transportation important?

(c) Why are these cities in a good position to market their products?

(d) What other advantages are there to locating factories in these cities?

(e) Why was there a great demand for the production of hydro-electric power from the St. Lawrence?

(f) Summarize the chief advantages of industrial sites on the Great Lakes - St. Lawrence Waterway.

Industries such as steel making, oil refining, and flour milling, which require much space and large quantities of raw materials, are found in these favored locations. In addition to these great centres, Southern Ontario has dozens of smaller industrial cities. Figure 2-1 shows all the cities with more than 10,000 people. Guelph, pictured in Figure 2-24 is a good example. Belching smoke and huge factories are not noticeable in this scene. Yet this city has 163 different industries and is a major manufacturing centre. The following table tells us something about the size of factories in Guelph.

Number of factories	*Number of employees*
140 factories	employ less than 100 workers
21 factories	employ 100-500 workers
2 factories	employ over 500 workers

Do most of the people in Guelph work in large or small factories? Smaller factories producing specialized goods are common in the smaller industrial cities of Southern Ontario. In Guelph all the larger plants manufacture electrical goods such as transformers, cables, and stoves. Clothing and various metal industries, such as steel furniture and storm windows, are

2–24. Guelph—one of Ontario's smaller cities surrounded by rich farmland.

also numerous, and there is a great variety of other manufactured products. These are all *secondary industries* using fairly small amounts of raw materials but requiring a great deal of skilled labor.

The highway that is changing Ontario

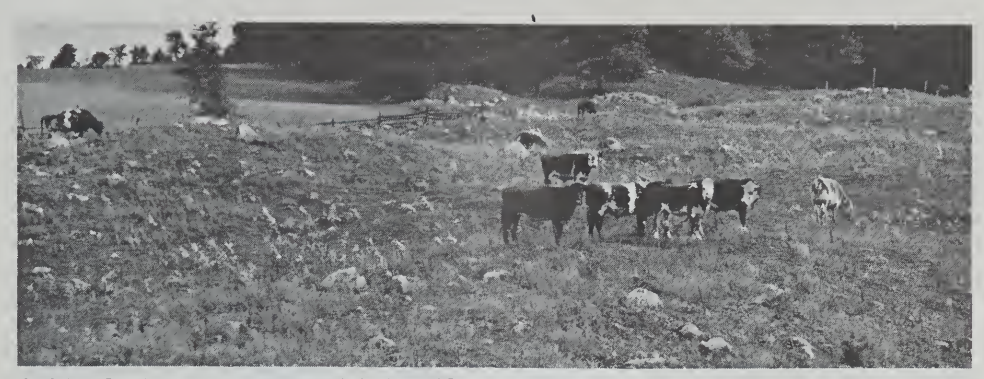
In all industries, obtaining raw materials and shipping out the finished product are important factors. Many factories use water transportation, and others have been located close to railways. Today road transport using auto-routes is influencing the pattern of new developments. In Southern Ontario the multi-lane, limited access Macdonald-Cartier Freeway (formerly known as "401") has promoted growth in some areas while by-passing others.

Before the Freeway was constructed along the south side of London, the main industrial development of that city was to the north. As soon as the auto-route was established, many firms sought locations close by so that their goods could travel by truck, and the northern area declined. Other cities close to the Freeway offer similarly attractive locations. Kitchener-Waterloo has been adding a new industrial development every month. Some industrialists claim that they can ship goods to Toronto 65 miles away via the Freeway more quickly than they can move them to another part of their own city.

Formerly, many factories used rail transport and much of St. Thomas' importance was as a railway town. Since the Macdonald-Cartier Freeway offered quicker transportation, the railway freight business declined. Some industries have moved out from towns like St. Thomas to locations where they can take advantage of the Freeway; and at St. Thomas a special road was built to link it with the city.

Almost any town close to the Freeway can offer special advantages to industry, and these towns are growing and prospering. Along with their growth is a change in their character. Private automobiles and service vehicles can also travel quickly along the new highway. Housewives from Kingston, London, or Windsor can go to Toronto for a day's shopping in the big stores or for an entertainment or sports event. Commuters and university students may travel as much as 100 miles to work. Retail delivery trucks can operate over a much larger area. Some commercial and industrial enterprises in the smaller centres are being driven out of business by their competitors in the larger centres, who are now within range of their former territories.

Figure 2-18 shows an interchange on the Freeway on the edge of Toronto. One such interchange covers 150 acres and includes 26 bridges. What problems are associated with the construction of this highway through a settled area of rich farmland?



2–25. Cattle graze on a morainic hill. (Ontario Agricultural College).

A research project

Choose any one of the smaller cities shown in Figure 2-1 and find out all you can about its industries. The Chamber of Commerce for that city will be of assistance to you. Find out what its main industries are. How are the raw materials obtained? Is there any special local reason why the industries are located there (such as special qualities in the water supply or local raw materials)? What are the sources of power for the factories? How are the products exported? Where are the markets? The Highway Map of Ontario and your atlas will be of some help.

Food for Ontario's urban millions

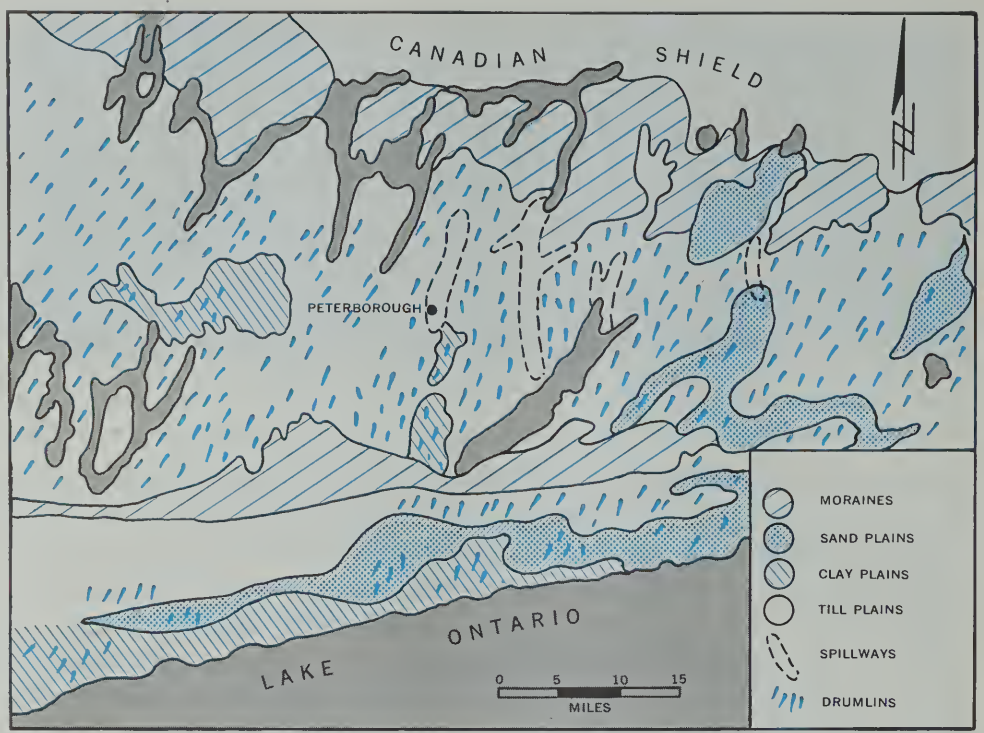
Refer to Figure 2-24. About what proportion of the land in this picture is farmland? What physical characteristic of the land shown is favorable to agriculture?

Southern Ontario is one of Canada's richest agricultural areas. It has more farms than any other province and in most years the cash income from these farms is greater than that elsewhere. It has more cattle than Alberta and produces more apples than Nova Scotia. Southern Ontario is a rich agricultural land. Most of the food produced is consumed in the area and does not enter into Canadian trade.

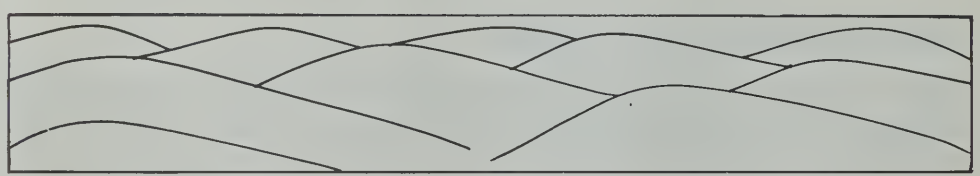
The land surface of Southern Ontario — legacy of the Ice Age

When the ice retreated from Southern Ontario, it left behind all the material which it had carried. This ranged from fine rock dust to sand, gravels, and sometimes large rocks and boulders. This covering on the landscape is known as *glacial drift*.

When the material is spread fairly evenly over the surface, these widespread deposits are known as *till plains*. Sometimes the drift is piled high into ridges known as *moraines*. Figure 2-25 shows cattle grazing on a moraine.



2–26. Glacial deposits in Southern Ontario.



2–27. Drumlin topography near Peterborough. In which direction did the ice travel?

2–28. Drift-covered landscape in the Bruce Peninsula.

Describe the form and surface of the land. Why is it unsuitable for growing crops? Locate moraines in Figure 2-26. In what general direction do they extend across Southern Ontario?

Drift deposits are often moulded by the ice into "basket of eggs" topography. These *drumlins* vary from a quarter of a mile to two miles in length and may be 100 to 200 feet high. Figure 2-27 is a sketch of a typical drumlin landscape. The mounds extend in the direction in which the ice was travelling. In which direction did the ice that covered the Peterborough area travel?

Figure 2-28 shows drift-covered landscape in the Bruce peninsula. What is this farmland used for? Much of the drift cover is poorly drained, especially in the low-lying hollows, but with careful drainage and fertilization most of the country can be made into productive farmland.

When the ice melted, great quantities of water were released. These streams carved large valleys or *spillways,* which are now usually occupied by streams far too small to have carved such large valleys. These are known as *misfit* streams. Why is this a good name? The former waters carried large quantities of sand and mud which were deposited when the current slackened. Many of the sandy areas were deposited in this way.

The huge quantities of meltwater enlarged the Great Lakes. Sands and clays were laid down on the beds of these lakes. Often beaches and bluffs were formed along their shores. These features may be several miles inland from the present shoreline of the lakes. Downtown Toronto is built on clays laid down by the lake, and the bluff that marks its shoreline is today about three miles from the water's edge. The sandy plains of the shores of Lake Erie which have proved so excellent for tobacco farming were also laid down in this way.

Reviewing glaciation in Southern Ontario

1. Match the following geographical terms with the appropriate definition: till plain, drumlins, drift, moraines, misfit streams, sand plains, spillways.

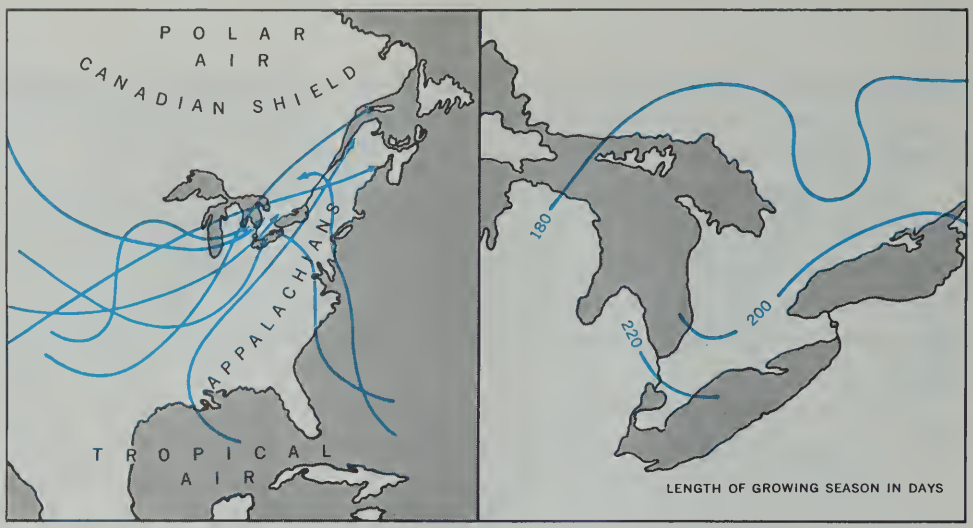
(a) All material deposited by the ice or by meltwater is classified as _____.

(b) A widespread area of clay mixed with sand, gravel, and boulders is called a _____.

(c) _____ were deposited by meltwater streams and by the enlarged versions of the present Great Lakes.

(d) Hilly ridges of rocky debris are known as _____.

(e) _____ are egg shaped mounds of glacial drift moulded by the ice.



2–29. Typical storm paths converging on Southern Ontario.

(f) Large channels cut by rushing meltwaters are known as _____.

(g) Small streams occupying valleys which were carved out long ago by the huge quantities of water released by the melting ice are now known as _____.

2. Most of Southern Ontario has a deep mantle of soil which was left behind after the ice retreated. What are the main types of soil? What are some of the problems associated with these soils?

How does the climate of Southern Ontario affect its agriculture?

What kind of weather did John Albion experience during his visit to Hamilton? What was the weather like when the *Meadow Queen* made its first trip to Hamilton at the end of March? The Great Lakes - St. Lawrence Lowlands experience very distinct seasons and a great variety of weather. In Figure 2-13 compare the average temperatures for January and July at Hamilton. The lowest temperature ever recorded in Hamilton was —17° F. and the highest recorded temperature for that city is 103° F.

Figure 2-29 shows the paths by which air masses* move across the continent into Southern Ontario. The air often follows the valleys as it crosses the region, in its path between the Shield and the Appalachians. Tropical air from the south often meets polar air in the Great Lakes area. This interaction of warm and cold air masses produces a variety of weather conditions.

1. When polar air lies over Southern Ontario, what kind of temperatures do your expect? In winter, polar air brings clear skies and very cold weather. Temperatures may fall below zero. In summer, polar air may provide welcome relief from hot, humid conditions.

*Large masses of air of uniform temperature and humidity conditions.

2–30. A common scene in Southern Ontario—a prosperous dairy farm (Ontario Agricultural College).

2. What are the characteristics of tropical air? This air, coming from the Gulf of Mexico through the Mississippi valley, is responsible for the near-tropical temperatures and humidities experienced sometimes in summer. Each year in Toronto 90° F. is usually recorded several times.

3. The mixing of warm and cold air can cause very stormy conditions. Winds of over 80 miles per hour were recorded in November, 1913. A heavy snowstorm resulted and the total loss of life was estimated at 250. Ice storms sometimes cause many problems as roads are slippery, trees and poles collapse under the weight of the ice, and visibility is greatly reduced.

4. Which part of Southern Ontario has the longest growing season? Good soil and a generally favorable climate make this area one of the richest and most varied farmland areas of Canada.

5. Southern Ontario has adequate rainfall for agriculture. Precipitation varies from 30 to 40 inches per year and is evenly distributed. Irrigation may be practiced in some areas for some crops. Heavy rainstorms are not uncommon, and flood damage, especially in spring, is the cause of most of the natural disasters of Southern Ontario.

6. What features of the climate of Southern Ontario are favorable to farmers? What are the chief climatic problems?

What is produced by the farmers of Southern Ontario?

The dairy cattle industry is very widespread. Milk, cream, and butter are sold locally throughout the province, and eastern Ontario is noted for the production of cheese. Figure 2-30 is a picture of a prosperous dairy farm. What are the large barn and *silo* used for? Refer to Figure 2-13. For how many months is the average temperature below freezing?

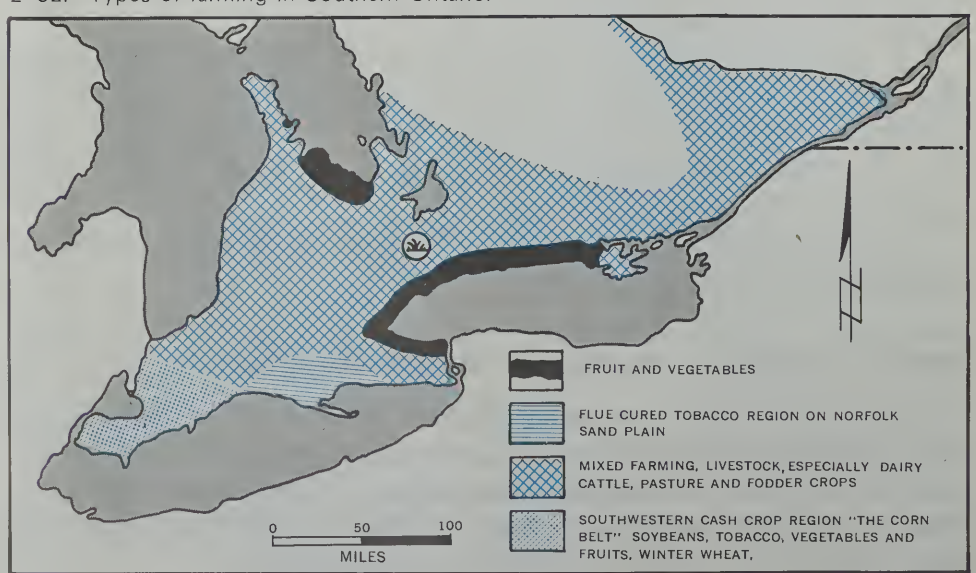
2–31. Growing food for the animals—pasture and feed grains (Ontario Agricultural College).

Beef cattle are also important and hogs and poultry are widely raised. A large proportion of the farmland must be devoted to pasture and to feed grains for the animals. Figure 2-31 is a view of rich rolling farmland typical of Southern Ontario.

Wheat was much more important in Ontario one hundred years ago than it is today. When the Prairies developed extensive wheat growing, the Ontario farmers turned to the cultivation of other food crops for the ever-increasing population. Winter wheat is still an important crop in south-western Ontario, but at least half the crop is usually fed to the animals on the farm.

Figure 2-32 shows the location of areas of specialized agriculture in Southern Ontario.

2–32. Types of farming in Southern Ontario.



2–33. Head lettuce: today's crop in Holland Marsh—tomorrow's salad in Toronto (Ontario Agricultural College).

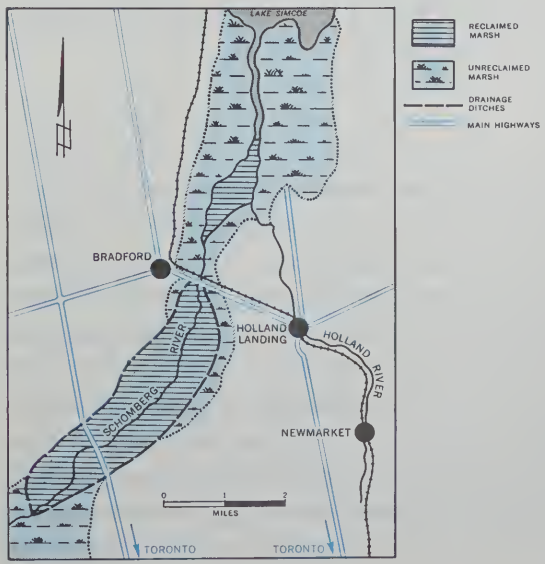
Fruits and vegetables

Figure 2-34 is a map of Holland Marsh and Figure 2-33 is a picture of head lettuce growing in a field there. Note the location of Holland Marsh in Figure 2-32.

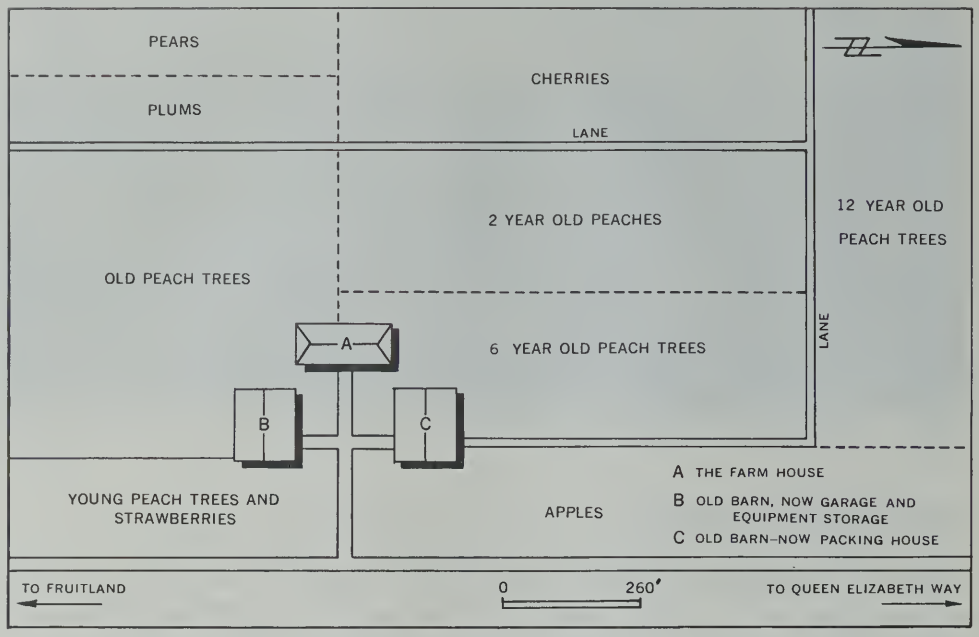
1. What do the map and photograph show about the relief and drainage of the land? Why are Dutch immigrants valuable settlers in this area?

2. How do you know that summers in Southern Ontario are often hot and dry?

3. Name two methods of transporting the products to market. Trucks carry fresh vegetables to Toronto daily. How far must they travel? Refrigerated railway cars carry the fresh vegetables as far afield as Winnipeg and Halifax.



2–34. Map of the Holland Marsh area.



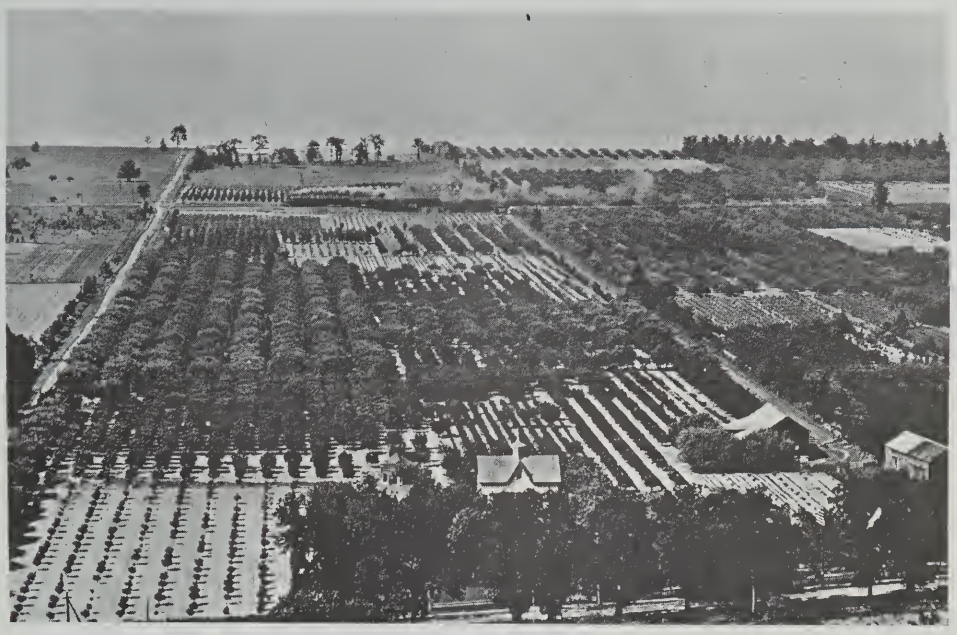
2–35. A map of the farm where Karen and Christopher live.

Some of the lakeside locations provide especially good conditions for growing apples and vegetables for canning. Sandy soils are well suited to this type of agriculture, and local temperatures may be slightly *moderated* by the lakes. Water heats and cools more slowly than land. At the end of the warm summer, the water does not cool off as quickly as the land. In fall and winter, lakeside areas are slightly warmer than places further inland. In spring the water takes longer to heat up than the land. Why is the cool breeze from the lakes often a welcome feature in summer? Why is it sometimes an advantage to a farmer to have the first fall frosts delayed for a few days?

The Niagara Fruit Belt

Karen and Christopher Wiswell live on a farm about halfway between Hamilton and St. Catharines. Find the position of their farm in Figure 2-1. The Wiswells have lived on this farm for almost 200 years. They like to hear great-grandfather, who is now a very old man, tell how his grandfather came to Canada after the American Revolution. Land was cheap then and the family wanted to continue to live under the British flag.

Figure 2-35 is a map of the farm. It has changed a great deal since great-grandfather was a boy. Then dairying was the chief business. Great-grandfather says that before that it had been a wheat farm. But for nearly a hundred years now fruit has been the most important crop. Now they grow nothing else. How can you tell that livestock used to be kept? Now there are



2–36. Fruit farms near Karen's home in the Niagara Fruit Belt (Ontario Agricultural College)

no animals. Christopher often wishes there were horses and cows in the barn instead of an automobile, a tractor, and a truck.

Figure 2-36 is a photograph of farms around Karen's home. How can you tell these trees were planted by man and that there is very little natural woodland? Describe the relief of the land. How is this favorable to the fruit farmers?

How does Mr. Wiswell earn a living?

1. What fruits does Mr. Wiswell grow? What accounts for more than half his acreage? Peaches provide half his income and strawberries a further quarter. The other fruits combined account for the remaining quarter.

2. Mr. Wiswell employs no regular help. In winter he prunes the trees. Then he sprays and fertilizes them and at the end of April plants new trees and strawberries. How does he get his truck and tractor to the back of the farm? He sprays every 10 or 12 days and cultivates the soil regularly. At harvest time he employs pickers — mostly housewives and high school students from St. Catharines. Strawberries are picked in June and July, cherries in July. Peaches follow in August, and plums and pears in September. Apples are last, from October onward. Apples are not very profitable to Mr. Wiswell. Like many farmers in the area he reduced his apple acreage in favor of more peaches when British Columbia and Nova Scotia began to compete in the apple market.

3. Why can Mr. Wiswell never take Karen and Chris on a vacation trip during the school summer holidays? He usually takes his holiday at the end of October when the year's crop is in.

4. About half the fruit crop is sold as fresh fruit and the remainder is canned locally.

5. *Mr. Wiswell's expenses.*

Wages to pickers and other help	$7,160
Containers for fruit	3,578
Fertilizer	2,210
Taxes	550

A summer excursion

Figure 2-38 is a large-scale map of the area where the Wiswells live. One inch on this map is equal to $\frac{3}{4}$ mile on the ground.

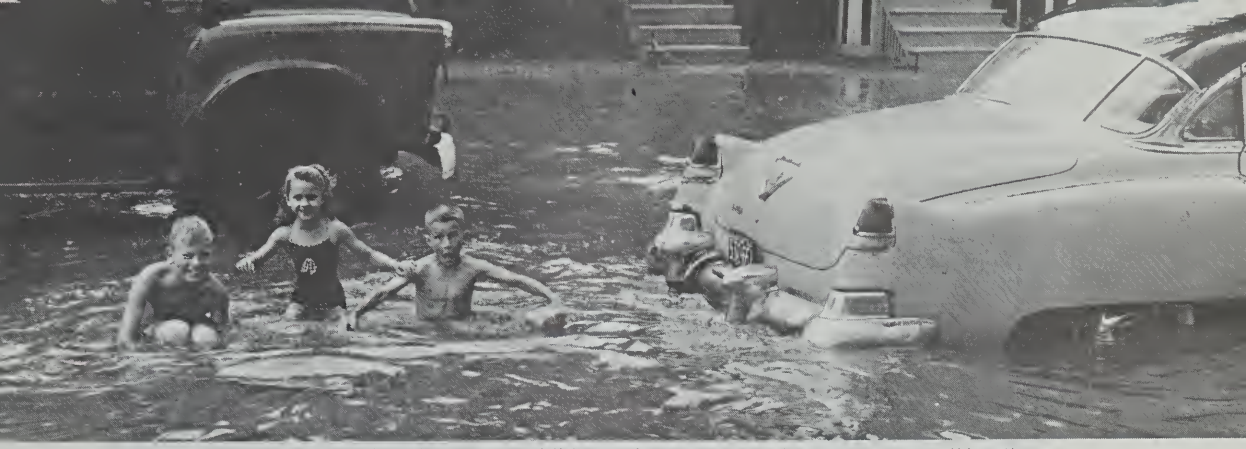
If you were visiting Chris and Karen where would you like to go on a hot day? The children often go to the beaches. What lake do they swim in? One day after they had been at Community Beach, they decided to walk south along the gravel road. They turned their backs on the water and set off. The brown figure on the *contour line* will tell you how far above sea level they were at that moment. They walked until they were 350 feet above sea level. How far did they walk? *When contour lines are widely spaced like this the land is gently sloping.* Name the two major roads they crossed. They had to wait for a train to cross at one point. Which railway line was it? Find the train in the picture in Figure 2-36.

At 350 feet the road ended, but they continued in a straight line. They scrambled upwards on hands and knees. How many feet did they climb in less than half a mile? *When contours are close together the slope is very steep.* This is part of the Niagara Escarpment which runs parallel to the south shore of Lake Ontario from Niagara Falls to Hamilton. Where have you noticed it before? How many roads stop at the foot of the Escarpment? Why? How does one road manage to make the climb? How many miles does the railway take to climb up? Figure 2-36 shows what the children saw from the top.

The Niagara Escarpment is important to Mr. Wiswell. Between this ridge and Lake Ontario the land is flat, and much of it is covered by sandy soils deposited by an ancient lake. These sandy soils are the best fruitland in Canada. Along the shores of the lake, temperatures are modified, so that blossoming is delayed in spring until frosts are over and frosts are delayed in the fall until the harvest is in. The downward slope to the land also helps to "drain" cold night air past the orchards to the lake.

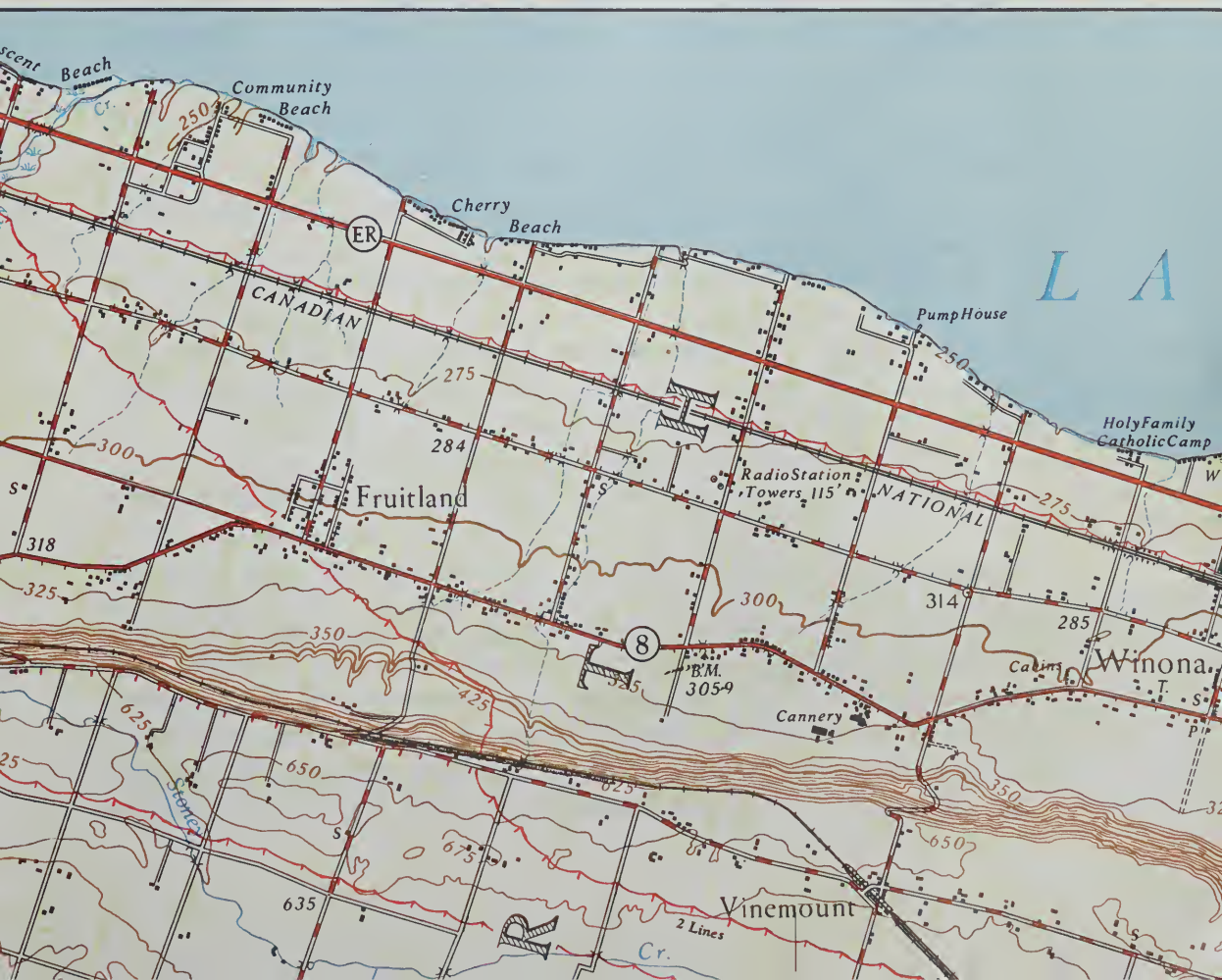
The climatic graph for Hamilton in Figure 2-13 provides further information about the climate of the Fruit Belt. What are the temperatures for

2–38 (Opposite). A topographic map of the area where Karen and Chris live; on the scale of 1:50,000 (Sheet 30M/4 East Half, in the National Topographic Series) (Department of Mines and Technical Surveys, Ottawa).

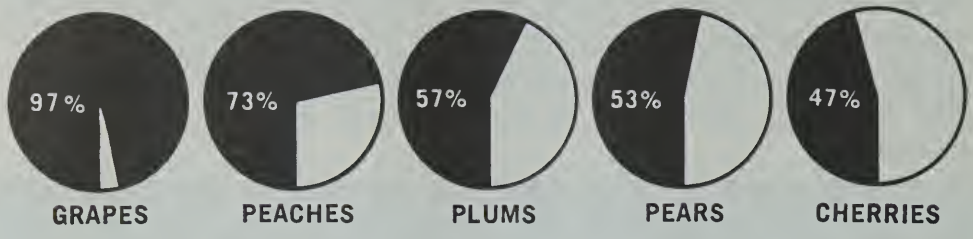


2–37. After an August thunderstorm—children playing on a Hamilton street (Hamilton *Spectator*).

the summer months? How are these helpful to the fruit farmer? What is the total annual precipitation? How is the precipitation distributed? It is important to have adequate rainfall in the growing months so that irrigation will not be necessary. Much of the summer rainfall occurs during thunder storms. Figure 2-37 shows children playing on a flooded street in Hamilton. Why would Mr. Wiswell not be as happy about the heavy rain as these children are?



2–39. Suburban housing encroaching on fruitlands near Hamilton.



2–40. Niagara fruit production as percentages of Canadian total.

Another look at the topographic map — Figure 2-38

1. Write down all the names that make you suspect that fruit-growing is important in this area.
2. Each black square represents a building. Do more people live north or south of the Escarpment?
3. Are there more orchards north or south of the Escarpment? What type of fruit flourishes on the higher ground above the Escarpment? Mixed farming with dairy emphasis is most general on this upland.
4. What is preserved in the cannery near Winona?
5. Why do most of the communications run in an east-west direction?

Planning for peaches

Peach trees require a special type of soil if they are to produce well. On Mr. Wiswell's farm up to ten tons of peaches can be raised on an acre of land. But his neighbor happens to have large areas of heavy clay which will produce only three and a half tons per acre. What soil is best for peaches? Figure 2-39 is a common scene in the Niagara Fruit Belt. The land on which the houses are built was formerly part of the vineyard. With proper planning,

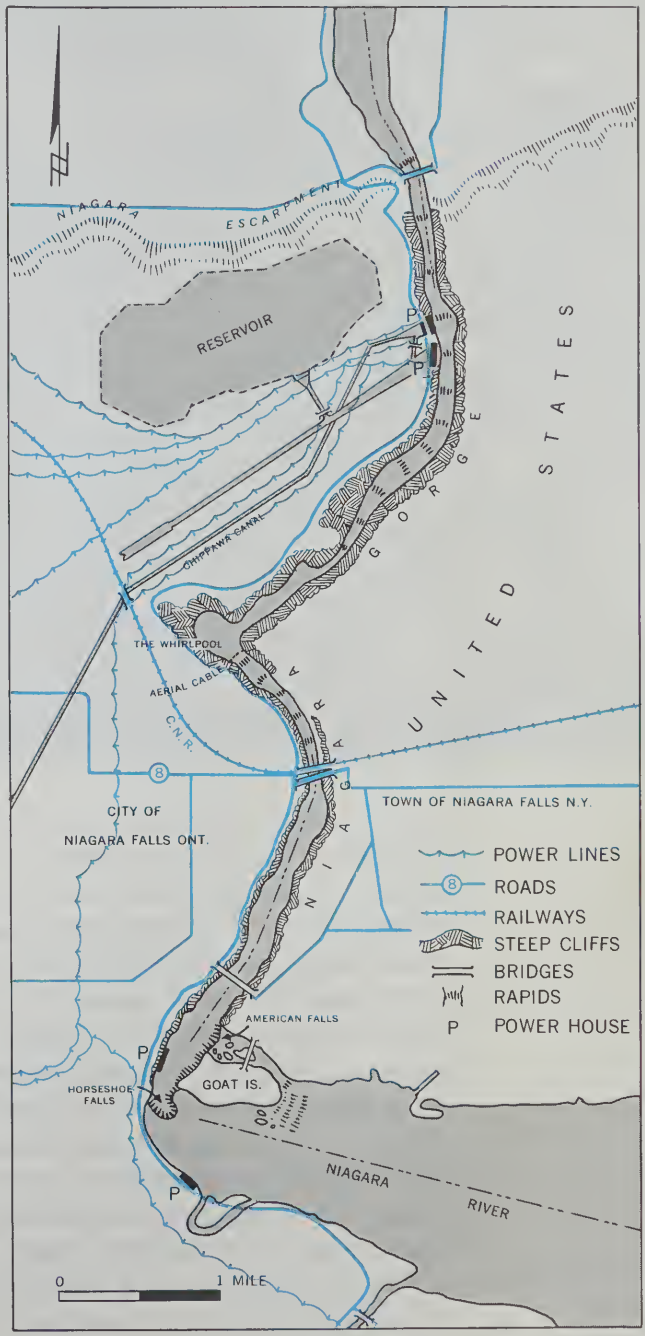
houses can be built on poorer soils such as Mr. Wiswell's neighbor's land, leaving the best soils for fruit production. Mr. Wiswell has been offered a great deal of money to sell his land for housing. He has been tempted to sell, for expenses rise as more and more people move into the area. They require roads, piped water, electricity, and schools. This raises his taxes. How much does he pay in taxes each year? More and more jobs are available and he must pay his pickers well or they will take jobs in the towns instead. But the Wiswells enjoy life on the farm, and they intend to stay until Chris is old enough to take over. Why do you think the Wiswells find life enjoyable in the Niagara Fruit Belt?

A review of the Niagara Fruit Belt

Figure 2-40 shows how important Niagara fruit is to Canada's economy. Why is fruit production so important in this region? What can be done to ensure that this land continues to produce fruit for Canadian families?

A visit to Niagara Falls

When John Albion came to visit his brother in Hamilton, he had already heard of Niagara Falls. This is probably the most widely known tourist attraction in Canada. At Hamilton he saw the Niagara Escarpment, and realized that this is the ridge over which the water of the Niagara River tumbles so spectacularly. When he visited the Falls, he was surprised to find that they were so far south of the escarpment. In Figure 2-41, find the

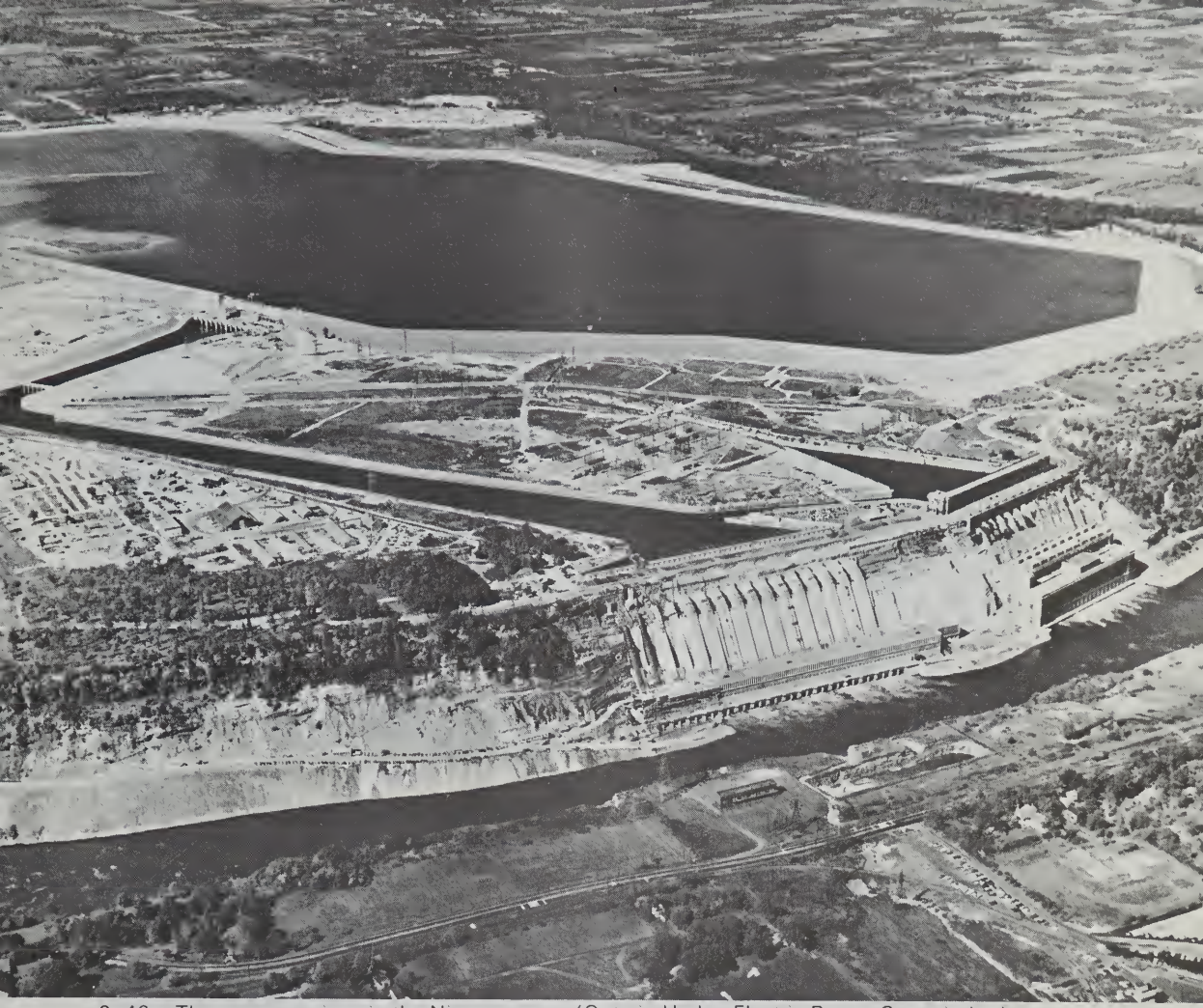


2–41. A large-scale map of the Niagara Falls area.

2–42. An aerial view of Niagara Falls (Ontario Department of Travel and Publicity)

Niagara Escarpment. This is an eastward continuation of the same ridge seen at Hamilton and near the Wishwells' farm. Now find the Horseshoe and American Falls. How far upstream are they from the Escarpment? Describe the nature of the river valley between these two points. The thousands of tons of water which rush over the edge of the Falls every day carry a good deal of sand, gravel, and small stones. This quickly wears away the cliffs so that pieces fall off the edge and the Falls slowly wear back upstream. Niagara Falls have moved back about eight miles in this way in about 50,000 years. Records tell us that the Horseshoe Falls have receded nearly 1,000 feet since 1764. Plans have been made to reduce this rate by excavating in the channel above the Falls, and so diverting the power of the water from the centre of the stream. The steepsided valley which is thus carved out is called a *gorge*. Note the almost vertical sides of the gorge in Figures 2-42 and 2-43.

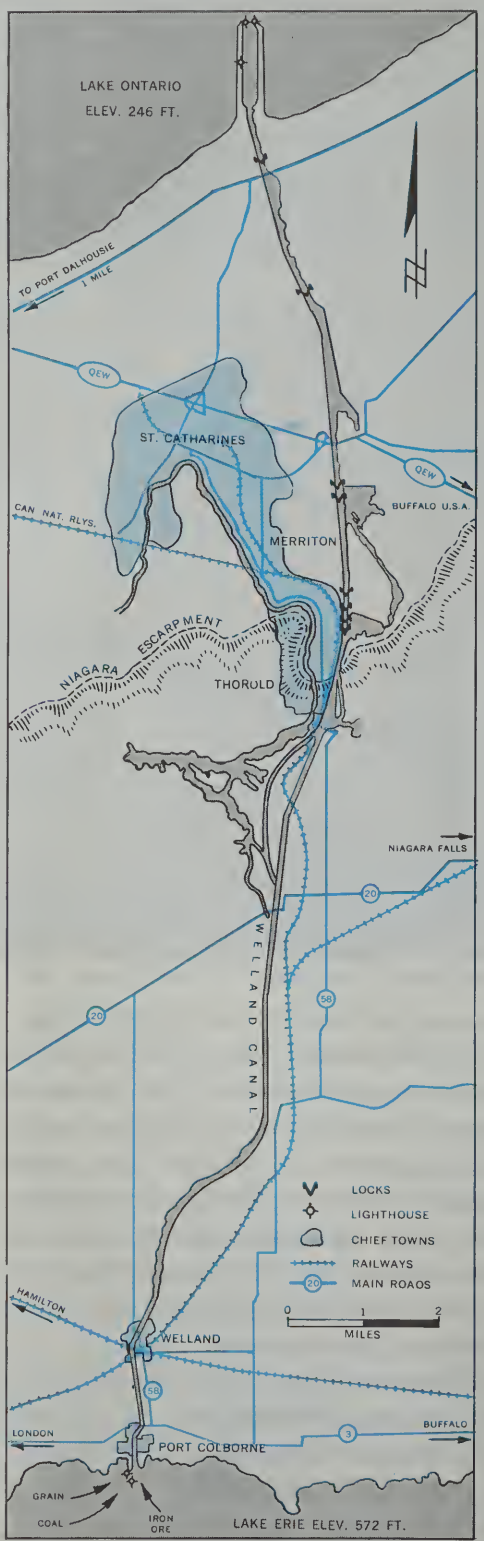
First of all, John went to see the Falls. He saw both the Canadian or Horseshoe Falls and the American Falls. What Island separates them? He



2–43. The power stations in the Niagara gorge (Ontario Hydro-Electric Power Commission).

was impressed by the roar of the water and by the clouds of spray. You can get an idea of what he saw in Figure 2-42. He noticed the great width of the Niagara River above the Falls. In Figure 2-41, estimate the width. Compare it with the width of the river in the gorge. John climbed down to the bottom of the gorge by a muddy trail. What is the water of the river like in this section? Six miles downstream he saw the two Sir Adam Beck generating stations shown in Figure 2-43. These have the largest concentration of hydro-electric power on a single site in Canada, but they have been engineered so as not to interfere with the Falls in any way. Count the number of power lines shown in Figure 2-41. Where is this power used?

John had never visited the United States, so they crossed the border by the bridge just north of the Falls. Why do you think bridges are not more frequently placed between the cities of Niagara Falls, Ontario, and Niagara Falls, New York? How else can you cross the border? Why are there no ferry crossings?



2–44. A large-scale map of the Welland Canal.

The *Meadow Queen* goes around Niagara Falls

The Niagara River is the natural link between Lake Ontario and Lake Erie on the Great Lakes-St. Lawrence Waterway. Since this is completely unnavigable, a channel had to be built if there was to be navigable water route between the lakes and the Atlantic. The first canal was built nearly 150 years ago. Figure 2-44 is a map of the new Welland Canal as it is today.

(a) When the *Meadow Queen* approaches the canal from Hamilton how high above sea level is she? What navigational aids assist the skipper to enter the north end of the canal?

(b) Figure 2-45 shows the northern end of the canal. How do boats climb the slope up from Lake Ontario? What type of farmland extends on either side of the canal? What evidence is there of one of the major planning problems in this area?

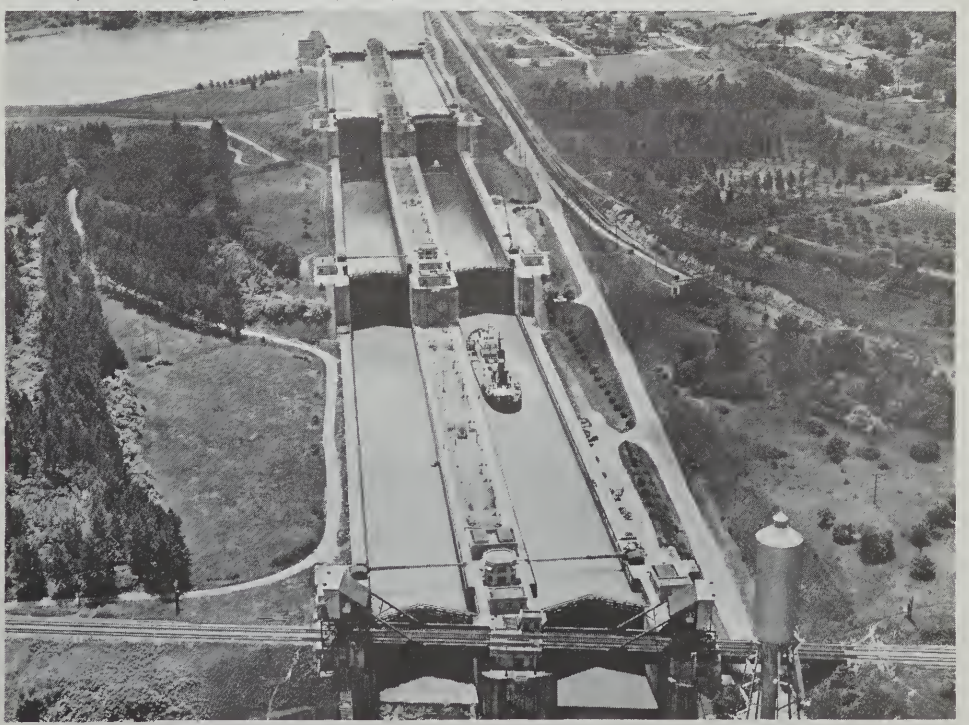
Figure 2-46 shows how boats "climb" the steep slope of the Niagara Escarpment.

(c) How long is the Welland Canal? How many feet has the *Meadow Queen* climbed when she emerges from Port Colborne into Lake Erie?

(d) This is an important industrial area. Primary iron and steel are made at Port Colborne. What raw materials are required for this? Why is Port Colborne a convenient place to assemble them? It is also a centre for refining nickel. Steel products,

2–45. The northern end of the Welland Canal (Ontario Department of Travel and Publicity).

2–46. A ship "climbing" the Niagara Escarpment by means of the locks in the Welland Canal (The Photographic Survey Corporation Limited).



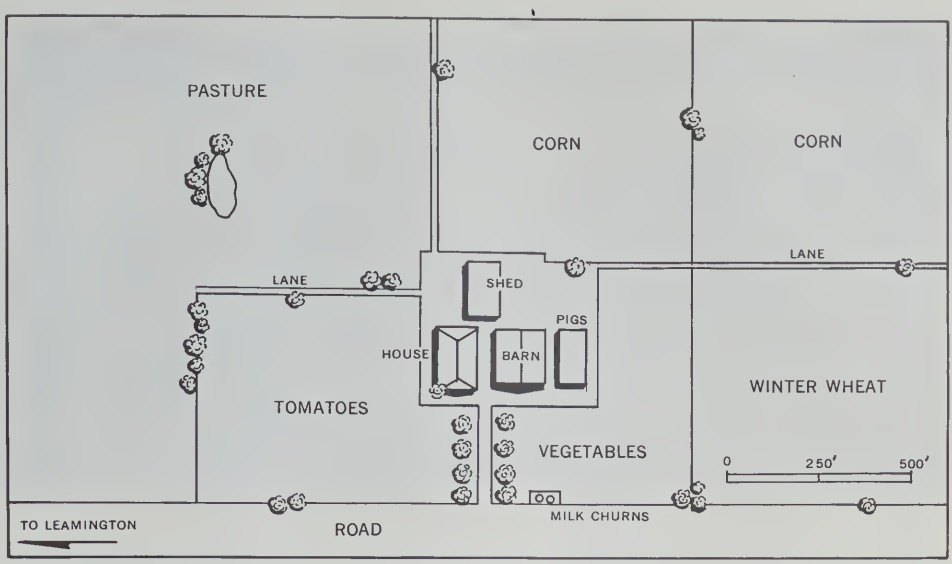
2–47. Unloading tobacco from the kiln (National Film Board).

electrical goods, textiles, rubber goods, pulp and paper, wines, and foods are among the many industries of the Welland Canal area. Which of these depend on raw materials brought by water? Which are based on local products? Where does the power come from for all these factories?

(e) The Niagara Peninsula is an important corridor for east-west routes between Canada and the United States. How many major roads and railways cross the Welland Canal? Location on a good routeway is an advantage to all industries.

(f) Make a list of all the reasons why the Niagara region is one of the most densely populated parts of Canada.

2–48. Part of the Canadian Corn Belt (Ontario Agricultural College).



2–49. A map of Mr. Kent's farm in the Canadian Corn Belt.

Cash crops in Southern Ontario

Cash crops are those grown for sale. Much of the grain grown in Southern Ontario is to feed the animals on the farm, but a crop such as tobacco is grown for sale so that the farmer may buy other things he requires, just as a city worker buys groceries. Figure 2-47 shows men unloading tobacco from a kiln near Simcoe. Tobacco grows well on the sandy soils near the shores of Lake Erie. What other crops flourish on sandy soils? Norfolk County is also noted for fruit production and Simcoe has a cold storage plant, a cannery, and a jam factory.

The Canadian Corn Belt

Southwestern Ontario is the greatest "cash crop" region of Canada. Figure 2-48 shows a fine field of corn. Find the man in the centre of the picture. How tall is the corn? Corn occupies nearly half the acreage in this area but only one of many different crops.

A Corn Belt farm: Figure 2-49

1. Mr. Kent has a farm of 75 acres near Leamington. Find Leamington in your atlas. The Wiswells' farm was 25 acres. How many times bigger is the Kent farm?

2. What do Figures 2-48 and 2-50 show about the relief of the land? How is this a help to Mr. Kent?

2–50. Picking tomatoes near Leamington (Ontario Agricultural College).

3. (a) The soils are rich and the warm, humid summer climate assists the growth of many crops. About how much of Mr. Kent's land is in corn? He keeps some for animal feed but usually has some left over to sell.

(b) What other grain does he grow? This is the only part of Canada really suited to winter wheat. This crop is sown in the fall and harvested the following summer. Why does it help the farmer to sow the crop in the fall rather than the spring? A cover crop of winter wheat also helps to prevent the soil being washed away by spring rains. How does the climate of southwestern Ontario assist in the production of winter wheat? This is the most southerly part of Canada, and has the longest growing season of any region except southwestern British Columbia.

(c) What are the workers in Figure 2-50 picking? This is the most important part of Canada for the production of commercial vegetables. Over a period of several years Mr. Kent grows onions, cantaloupe, asparagus, cauliflower, celery, carrots, and beans in his vegetable garden. Some are sent fresh to the cities for sale. These are picked up daily by truck. About one third go to Leamington for canning. Mr. Kent is very proud of his young carrots which he sells to be canned as baby food. Look in your local supermarket and find out how many of the canned goods come from this area.

(d) Mr. Kent keeps a herd of dairy cows. Each day the milk truck picks up his milk cans from the platform by his gate.

(e) What other animals are kept? Mr. Kent sells his pigs for bacon. What food is produced on the farm for the pigs and cattle?

Other farmers in the area grow large quantities of soybeans. These are used for animal feed, fertilizer, and as a source of oil for making paint and soap. Around Chatham many farmers find sugar beets do well on their land. They can sell the beets for sugar and the tops for cattle feed.

How the land of Southern Ontario is used

1. Figure 2-51 shows how the land of Southern Ontario is used. What is the major contrast between the northern and southern sections of this map?

2. About what proportion of the land in Southern Ontario is farmed — that is, used for crops of all kinds or for improved pasture? Name some of the chief crops. How does the map indicate that large numbers of animals are kept? Why is there a big demand for animal products?

3. "Horticulture" means "gardening," and the word is used to describe the growing of fruits, flowers, and vegetables. Why are many areas used in this way?

4. Suggest why there are many patches of scrub grassland and scrub woodland? Why is it profitable for the farmers of Southern Ontario to drain and fertilize many areas of rather poor land? Where have large areas of marshland been reclaimed? Why does this area provide good farmland?

5. What special soil and climatic conditions have favored the growth of orchards and vineyards in the Niagara Fruit Belt? Why is this area also attractive to industry? In many parts of Southern Ontario, land is in demand for both agriculture and industry. It is essential that wise decisions be made regarding the use of the land, which is one of Ontario's most valuable natural resources.

The millions of people who live in Southern Ontario need large quantities of food. Because of the huge market, it is possible for an Ontario farmer to spend a great deal of time and money in order to get good crops from some of the poorer land. It is profitable to keep large numbers of cattle, hogs, and poultry, even though the severe winter temperatures make it necessary to provide feed and shelter. Large quantities of fresh fruits, vegetables, and flowers are needed in the cities. This makes market gardening an important aspect of farming in Southern Ontario. Specialized types of farming have developed at the same time as the growth of huge industrial cities. How different would the land use map look if it had been made one hundred years ago? two hundred years ago?

Conservation in Southern Ontario

Make a list of all the natural advantages Southern Ontario enjoys, both for farming and industry and as a pleasant and interesting place to live. Unfortunately, if they are not wisely used, natural resources can be spoiled and even permanently lost. People are becoming aware of this, and efforts are being made to *conserve* our resources so that future generations can enjoy them too.

Water is one of our greatest resources. Think of all the reasons why it is important. In some areas industrial waste has polluted rivers and lakes, so that fish cannot live in them and they soon become unsuitable for human use. Conservation authorities are attempting to control this. As waters are gradually cleaned they are restocked with fish, and often picnic grounds and recreation areas are established. In some parks, demonstration areas and displays are set up to help visitors understand the principles of conservation.

Floods are frequently a problem in Southern Ontario. Since most of the forest cover has been removed, there are fewer trees to hold down the particles of soil and break the force of the driving rain or rising waters. Attempts are being made to reforest land where it is not useful for agriculture. Channels are being deepened and straightened, and sometimes dams are built to hold back flood water.

Farmland and forest must be wisely used if we are to have adequate food for the future. How is valuable farmland being lost in the Niagara region? Sometimes farmland can be extended by draining marshes, by providing irrigation water, or by developing special strains of seed for certain areas. Where has rich land been reclaimed from marshes in Southern Ontario? What is it used for?

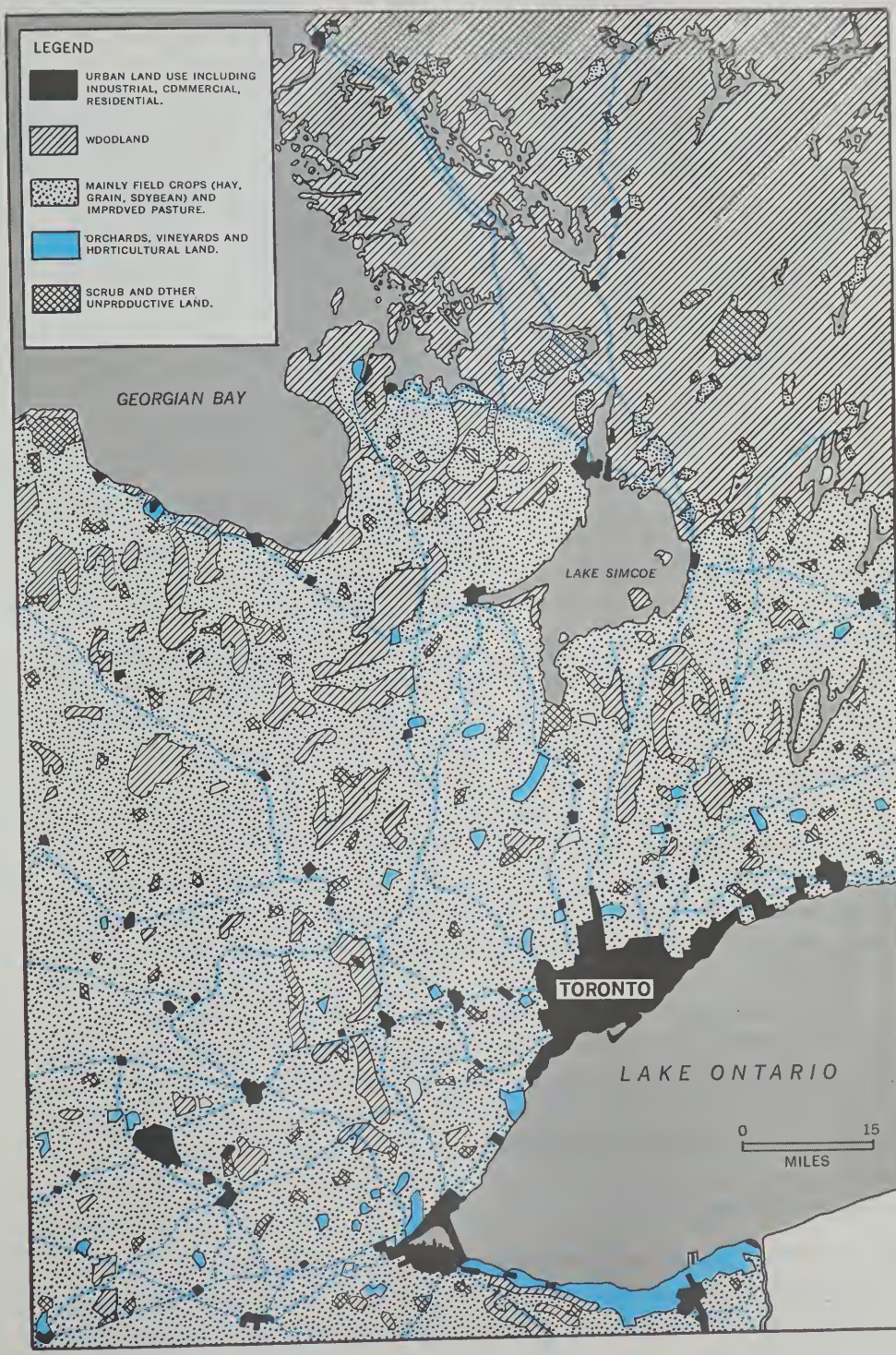
Unique features must be preserved for future generations. Name two of the outstanding natural wonders of Southern Ontario. By setting these aside as parkland for everyone to visit and enjoy, these areas have been preserved for future generations. How has the Ontario Hydro-electric Power Commission managed to use the power from Niagara Falls without interfering with their character? Where was it necessary to eliminate spectacular rapids in order to provide power and navigation facilities? What efforts have been made to promote other recreational aspects in this area?

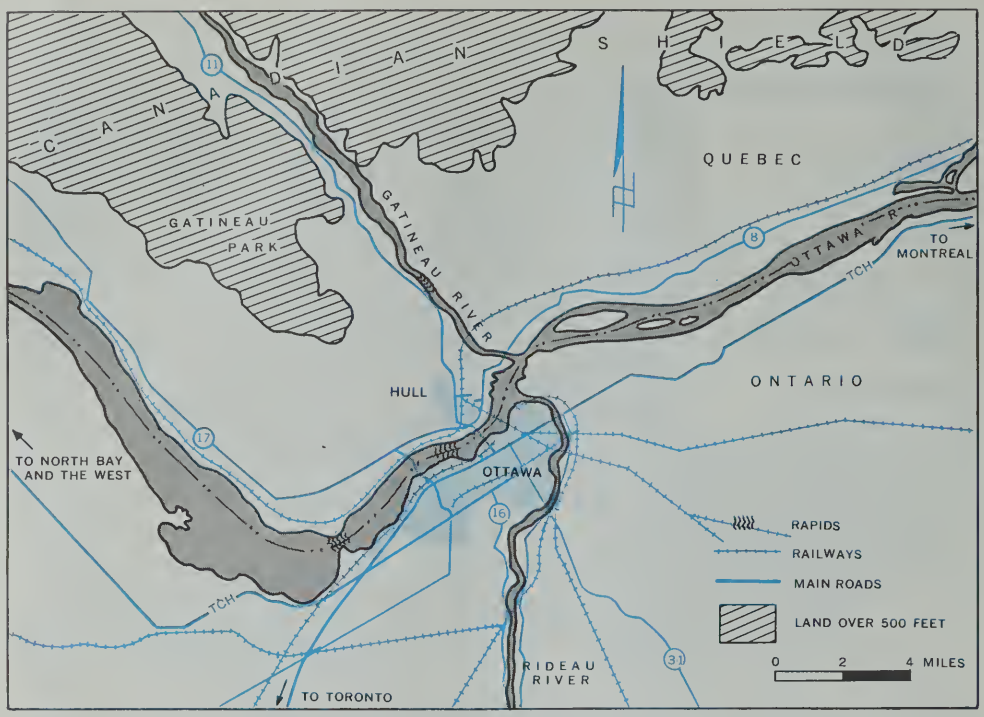
Southern Ontario is one of the richest parts of Canada in historic sites and buildings. Many towns will soon be two hundred years old, and there are houses, churches, mills, forts, and many other fine relics of the past. Sometimes these are torn down in order that a new gas station or dress shop may be built. Many towns are now trying to preserve their ancient landmarks, and to locate their new developments where old buildings of no special interest can profitably be replaced. Give an example of such a city. What special projects has the Ontario Government undertaken to preserve the reminders of the past?

Ottawa — our National Capital

Two hundred years ago the Ottawa River carried large numbers of birchbark canoes and the air rang with the gay songs of the paddlers. The songs were all in French, for these were the *voyageurs,* and the Ottawa was the main route to the fur-bearing lands of the west. The voyageurs left Montreal in

2–51. A land-use map of part of Ontario (simplified from the land-use map issued by the Geographical Branch, Department of Mines and Technical Surveys).





2–52. A sketch map to show the position of the city of Ottawa.

fleets of large canoes. They could paddle from dawn to dusk, averaging 40 strokes per minute in calm water. Where rapids or falls barred the way, they could carry 200 pounds or more of goods on their shoulders. They spent their winters among the Indians in the bush, and returned with a load of furs in the spring.

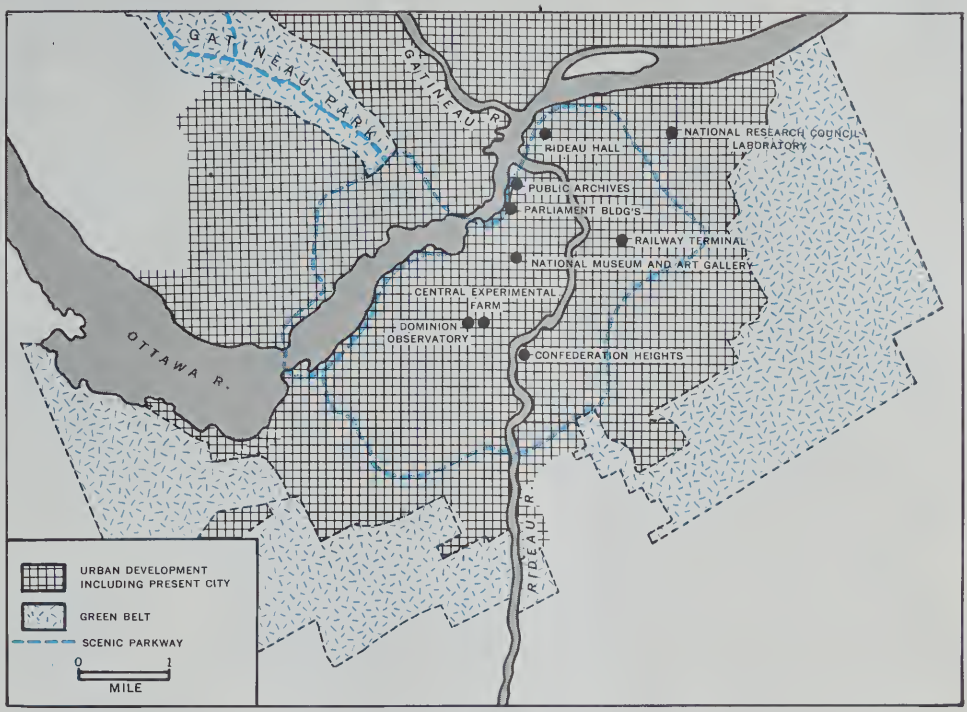
Today the only boats on the Ottawa are small pleasure craft, but the Ottawa Valley remains one of the chief routes to the west. Look at the map in Figure 2-52. How many major roads and railways follow the Ottawa Valley today? How many miles is Ottawa from Toronto and Montreal? How many road and rail routes meet at Ottawa altogether? How would you reach Ottawa from your home?

At first the fur trade dominated Ottawa. Later, it became an important lumbering centre and other industries developed. In 1858, Ottawa was selected as our federal capital. The National Capital Plan has been drawn up, to try to ensure that the Ottawa area will develop in the future as a capital of which all Canadians can be proud.

A glimpse in the future

Figure 2-53 is a simplified sketch of the National Capital Plan.

1. Careful plans have been made to control new building in the city. Land has been set aside for a Green Belt. As the population expands, new



2–53. A plan for the National Capital Region.

towns will be established outside this area. About how wide is the Green Belt? What is the part on the north side called? This is in the Province of Quebec and is part of the mountains of the Canadian Shield. Look in Figure 2-52 and find out about how high it is. How does this compare with the areas on the Ontario side? Gatineau Park is used for skiing, hiking, swimming, camping, and picnicking. How far is it from the centre of Ottawa?

2. Along the Rideau and Ottawa rivers and by the old Rideau Canal small parks and landscaped parkways have been created. Millions of tulips line these drives in spring. Trace the route of the Parkway from Rideau Hall round the city and returning through Hull. About how long is it? Passenger cars only may use this route.

3. Billboard advertising on highways entering Ottawa is strictly controlled and the unsightly railway tracks into the centre of the city have been removed. A single passenger and freight terminal has now been established. Locate it in Figure 2-53.

4. List all the national buildings in Ottawa. Such places as the National Gallery and the Parliament Buildings provide a service function for the whole of Canada.

One third of the working force of Ottawa is employed by the Federal Government. But the city also has important industries. How can you tell that hydro-electric power is available locally? Lumber is obtained from the

2–54. An aerial view of the centre of Ottawa (Canadian National Railways).

slopes of the Canadian Shield north of the city. Lumber, paper, and matches are important products. Printing and publishing, food processing, textiles, and chemicals are also significant.

A bird's-eye view of Ottawa

Figure 2-54 is an aerial view of the centre of Ottawa. Match the letters indicated with the correct statement.

This was once the main highway westward.
This city is in the province of Quebec.
This canal is now a scenic routeway through the city.
Matches, made at this mill, are a leading product of the Ottawa region.
This is where our government holds its debates.

Reviewing Southern Ontario

1. (a) Make a list of things in your house that were made or processed in Southern Ontario. Divide your list into manufactured goods, agricultural products, and others. Does your list justify the title of this chapter?

(b) About how many pieces of mail from Ontario come into your home every year? Many of these will be from the Federal Government. Some will be advertisements from Ontario firms. Others may be publications or goods you have ordered by mail.

(c) Why is Southern Ontario important to all Canadians?

2. Topics for discussion. How have the following factors helped Southern Ontario grow into a great industrial and agricultural area? How have some of the disadvantages been overcome?

(a) *Position*. Think about the settlement of the area; the early siting of industries; modern trade; obtaining and marketing goods.

(b) *Transportation and communication*. Why can Southern Ontario produce such a variety of goods cheaply and efficiently? Why is it fairly easy to build and maintain a good system of communications?

(c) *Power*. Why is this a problem in Southern Ontario? Name several ways in which extra supplies of power have been obtained?

(d) *Relief, topography, and scenery*. In what ways is this country favorable to industry, agriculture, and tourism? How have some of the problems been overcome?

(e) *Soils*. Which soils are especially favorable to agriculture? How have poorer soils been improved?

(f) *Climate*. How is the climate of Southern Ontario more favorable to farmers than the climate in many other parts of Canada? In which places are conditions especially good? What are the disadvantages of the climate with regard to agriculture and industry?

(g) *Historical development*. Think about the history of Southern Ontario. Why was the early development of farms and industries an advantage?

GAGE